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Volume 4 Number 8



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As in the past several issues, AFV-G2 is continuing to present the first complete illustrated history of the Armored Fighting Vehicles of the Italian Army. Authored by Dr. Nicola Pignato, a widely-known historian on the Armed Forces of Italy, this serialized book is available only to readers of AFV-G2. The portion of the book in this issue will be found at the center of the magazine, between pages 18 and 19, bound in with the regular pages. To remove the center supplemental sheet in this issue, use a razor blade or sharp knife to carefully slit between the staple holes in the sheet, which will then be free of the magazine. Readers may then punch the supplemental sheets with a three-ring binder punch and install them in a separate binder. When placed together with the other supplemental sheets from AFV-G2, the complete series will present a detailed history of all Italian armored vehicles, with numerous previously-unpublished photographs and 1:50th scale drawings. The sheets are separately numbered for ease of binding, and at the end of the publication, a complete index and table-of-contents will also be furnished to readers in order to complete the book.



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November 1973

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AFV's of Italy, the continuing series by Dr. Nicola Pignato

Between 18 and 19

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Cover:

A French AML H-90-7 Armored Car poised in a firing position is the subject for this issue's cover. The AML is armed with a 90mm DEFA smooth-bore gun, which fires a fin stabilized HEAT projectile. This is the heaviest anti-armor weapon to be mounted on a light armored car, and it gives a very potent punch to what would otherwise be a purely reconnaissance vehicle. A quantity of these AML's has been sold to various foreign countries.

Photo courtesy of the French Government.

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AFV-G2 is a magazine, published monthly for Armor enthusiasts, with the purpose of gathering and disseminating information about Armored Fighting Vehicles and their employment; to provide an opportunity for persons seriously interested in the history of Armored Fighting Vehicles, in the modeling of these AFV's and associated equipment, and in the playing of military Wargames utilizing miniature AFV's, to share ideas and items of mutual interest and to promote an interest and awareness in the subject of Armored Fighting Vehicles.

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MODELING

the MATILDA

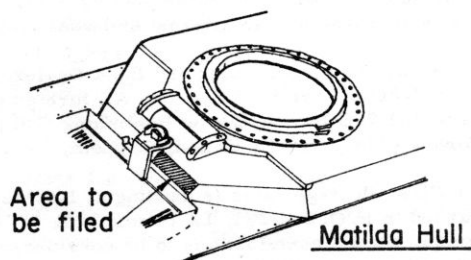


by S.R. Cobb

Upon first inspecting the Tamiya Matilda Mark II kit, it would seem that Tamiya has produced another outstanding model. But, although the kit has exceptionally nice trackwork, is well molded and fits together nicely, there are a few flaws. The box art and instruction sheet depicts a Matilda Mark II, but the kit itself has a Mark II front, and the rear of a Mark III. The external gas can mounted on the rear decking only appeared on the Matilda Mark IV or Mark V.

This article will be devoted to the Matilda Mark II, which will keep the conversion work as simple as possible, and is also the fastest way to complete a model of competition standards. Along with the necessary front hull modifications, there are some super-detailing opportunities with the model that should be taken....so, let's get started with the work.

To begin with, the Glacis/driver's plate is poorly molded. The left portion of the plate should have



a distinct beveled edge similar in appearance to the right portion, but approximately one half the height from

the top edge of the hull and at a greater slope of approximately 45 degrees. This modification can be achieved by filing the driver's plate area with a small flat file or emory board. Next, the protrusion in front of the hull periscope is too pronounced, and should have its edges rounded to form a soft curve. This can be done by either sanding the edges down, or by using "green stuff" body-filler, and then sanding until the surface is smooth.

The "weld lines" near the front louvered differential hatches should be extended up to where the top track guard meets the hull. This is simple to do, by running a small thin bead of "green stuff" to extend the welding seam. While working in this area, a small "L" shaped handle should be installed above the louvered hatch, approximately three-quarter the way up from the louver openings, midway between the weld lines and the track guard. This is done by locating the position of the handle and drilling a small hole in the hull, using a .0135" drill, and then cementing a thin wire or stretched sprue handle into the hole. In this same area, a small bracket should be installed on the inside of the track guard, to support the louvered differential hatch when it was in the open position. See Figure 1 at the top of the next column. The bracket is constructed from a piece of .015" plastic card, one quarter inch in length, with the top one sixteenth inch slightly bent toward the front. This bracket is cemented to the inside of the track guard as shown in the sketch.

On the bow of the tank, there should be two square plates slightly protruding out from the hull, located just below the seam on the bottom half of the hull,

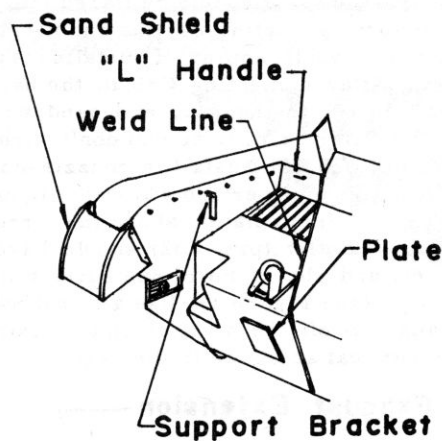


FIGURE NO. 1

just outboard of the weld line (see Figure 1). Cut .015" plastic card about 3/16" square and cement to the hull. If necessary, use "green stuff" to fill edges so that there isn't any space between the plates and the body.

Omit the right headlight (part C-18) and fill the mounting holes in the bow. The Matilda Mark II used as a basis for this article mounted only one headlight, and this was on the left side. As for the light itself, the mounting bracket is poorly done. The supporting arms do not go straight down, but should extend to the rear and fit tight against the track guard, while extending slightly to the right. This is achieved by either warming the part (C-18) until the arms are pliable so as to be moved into the correct position with care. If you don't succeed with the first try, there is still the second headlight, or if that fails, you can remove the support arms and make new ones from sprue or wire.

Additionally, there is rivet detail missing on the inside of the track covers, and this may be added. See Figure 1 for the numbers and the spacing of rivets; I used "Instant Rivets" for these additions, but readers may wish to use small drops of white glue.

The rear-view mirror on the right hull front should have a small "L" shaped handle located on the top of the bracket adjacent to the bracket supporting the mirror. This handle can be made from sprue or wire 1/8" in length, a hole drilled (.0135" dia.) in the bracket and the handle cemented in place.

Most Matilda's used in North Africa had sand shield extensions on the front and rear track guards. These can be made by cutting .015" plastic card into eight pieces in a roughly trapezoid shape for the side parts, and four more pieces which are the same width as the track guard and approximately 5/8" in length for the top parts. See Figures 1 and 2 (below) for the shape of these pieces. Note that the side parts of the shields should be rounded on the top. The top part of the shields should be warmed until they can be bent to the same curve as the top of the side pieces. Then, cement the tops so that they are inset a little, to form a small outer lip on the sand extensions.

Tow cables are totally absent from the kit, but can be manufactured by using picture hanger wire or model airplane control line, and some eyelets. (If you use the control line, it must be heated over a flame to remove the "stiff" temper.) Cut the wire to the length required, and then bend one end over to form a small loop. Now slide one of the eyelets over the wire, over the loop, and pinch the eyelet to hold the loop in place. Next, slide another eyelet onto the wire, fold over the end to form a loop, and repeat procedure as before. Once the cable has been created, it can be mounted on the model, one end connecting to the left front tow hook bracket (part D-11) and the other end to the hand hold bracket on the left side of the hull just behind part C-43.

Periscope covers are missing from the three periscopes and can easily be constructed from paper, using the template (below). These covers take the form of forward-sloping hoods, curved to the shape of the periscope surround at the rear; they should be installed on top of the driver's periscope, the turret periscope in front of the bullet splash shield, and the turret periscope located on top of the cupola.

As usual, Tamiya provides holes in the bottom

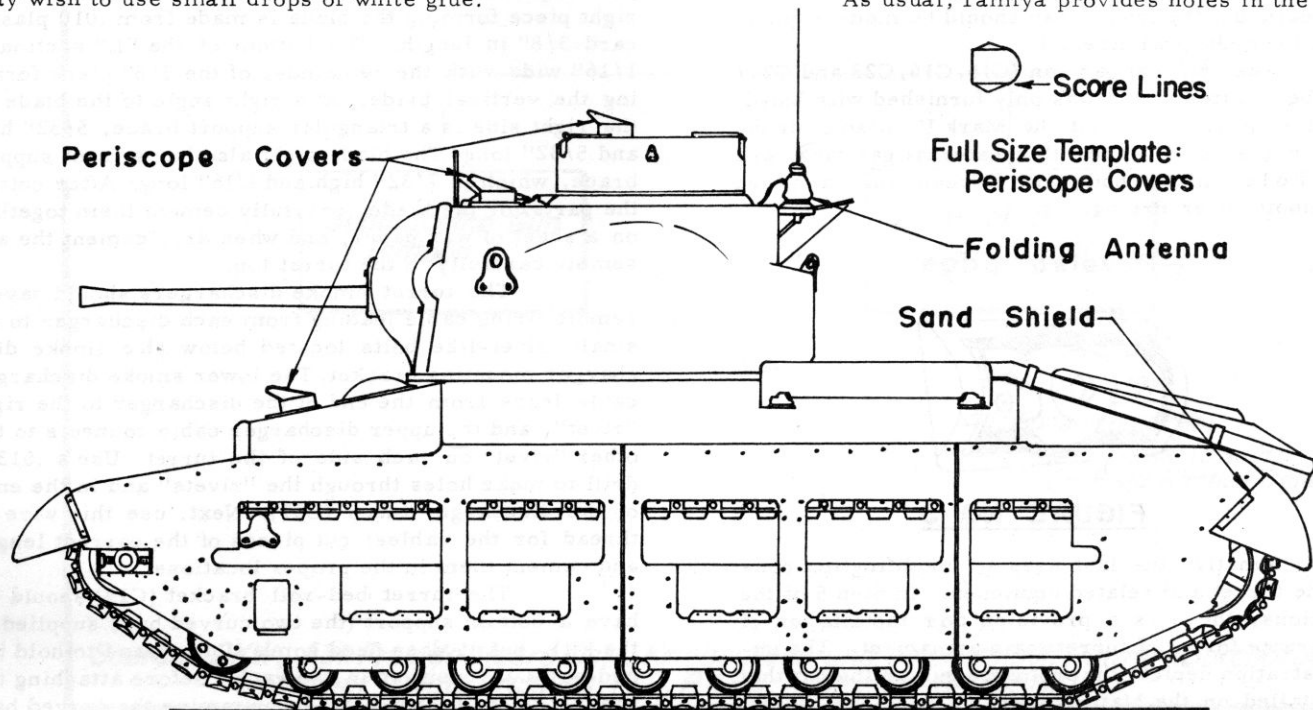


FIGURE NO. 2

of the hull for motorization, yet nowhere in their instructions is there a provision for a motor. Anyway, fill the holes by cemented pieces of plastic card on the inside and then apply "Green Stuff" over the depressions and sand smooth after set. At this time, you may also wish to take off the Tamiya trademark, using sandpaper.

Moving toward the rear of the vehicle, the hinge part (C43) should either be built-up with "Green Stuff" so as to come into contact with the body, or remove the locating pins on this part and move it slightly inward to achieve the same end results.

Likewise, the rear exhaust is slightly wrong for a Mark II.; in fact, it is that of a Mark III. To correct the exhaust, the right exhaust pipe (C39) and exhaust extension (C27) should be omitted. Fill the locating holes on the hull top and rear decking with "Green Stuff" and sand smooth. Also, the muffler needs some modification, as shown in Figure 4. First of all, the lower left and upper right (C20) parts should be omitted and the lower right C20 part should be turned 90° to the left so that the open hole faces downward (see Figure 2). The semi-circular locating pin should be cut off and then the part cemented in place. Next, an extension part of round plastic doweling the same diameter as the end of the muffler and 1/8" in length should be cemented on the modified lower right side.

The rear license light (B18) part is correct as the kit presents it but when superdetailing the kit, this part should not be overlooked. File or use sandpaper to remove the molded wiring from the back. Then cut small lengths of wire or thread and insert into the rear of the plate. Two separate loops should start from the middle, going to the back of the lights, one to the right and the other to the left. A third strand connects to the other two at the mid-point of the plate, and goes to the top of the track guard.

The shovel (C41) should be replaced with an "H & R Products" shovel to add more realism. The shovel is located in the correct position, and should have a strap mid way between the handle and spade in the identical place as that on C41. The front strap should be rectangular shaped instead of curved as depicted in the kit. The rear strap can be made from paper or .010" plastic card, but the front strap should be made of plastic card for additional strength.

The external gas can (C15, C16, C23 and C24) should be omitted, as it was only furnished with Matilda Mark's IV or V and not the Mark II. Also omit the support brackets (C19) for this external gas tank, and fill the holes in the body with "Green Stuff" and then sand smooth after drying.

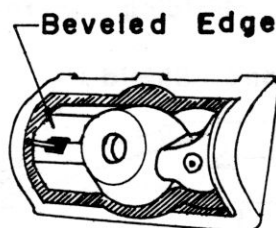


FIGURE NO. 3

Finally, the last area of modification concerns the turret and related equipment. In Step 5 of the instructions, there is a provision for installation of two alternate forms of turret main armament. The upper illustration depicts the prototype gun or the one that was installed on the Matilda Mark I. Since our subject is the Mark II. version, parts A3 and A5 should not be

used. Part C35 should be cemented in place as indicated in the instructions, but should be flared into the barrel so as to form a continuous line and not the collar arrangement that would appear if installed straight from the kit. After cementing C35 to the barrel, use "Green Stuff" to fill in the gap, and sand smooth the joint after the filler is dry. If you don't wish to go to all this trouble, you can install a muzzle-cover, by making it from tissue paper and white (or liquid) glue.

The area immediately above the turret machine gun on the mantlet (part C32) should have a more distinct bevel, and should be of one surface instead of a split surface (see Figure 3). Use a small Swiss pattern file, and file off the area at an approximate 60° angle to the vertical as shown in the sketch.

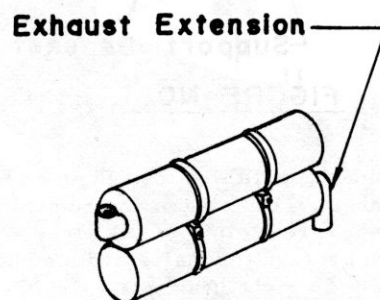


FIGURE NO. 4

The co-axially mounted machine gun (C36) is slightly underscale, and it should be replaced. Use an "H & R Products" German MG34; trim the barrel to the same length as part C36, and fill in the barrel jacket holes with "Green Stuff", sand smooth after drying and cement in place in the mantlet.

At this point, I should mention that all openings should be drilled-out, if they haven't already been done so. This one step adds immensely to the realism of the completed, superdetailed model.

The absence of the commander's blade sight should not be overlooked; this was mounted on the turret top mid-way between the ventilation hood and the periscope in front of the bullet splash shield. The upright piece forming the blade is made from .010 plastic card 3/8" in length. The bottom of the "L" section is 1/16" wide with the remainder of the 3/8" piece forming the vertical blade. At a right angle to the blade on the right side is a triangular support brace, 5/32" high and 5/32" long. The blade sight also has a front support brace, which is 7/32" high and 1/16" long. After cutting the parts for the blade, carefully cement them together on a sheet of wax paper, and when dry, cement the assembly carefully to the turret top.

The turret smoke dischargers should have a remote firing cable leading from each discharger to the small, rivet-like bolts located below the smoke discharger mounting bracket. The lower smoke discharger cable leads from the end of the discharger to the right "rivet", and the upper discharger cable connects to the other "rivet" on each side of the turret. Use a .0135" drill to make holes through the "rivets" and in the ends of the discharger tubes (C37). Next, use thin wire or thread for the cables; cut pieces of the correct length and cement them in the proper locations.

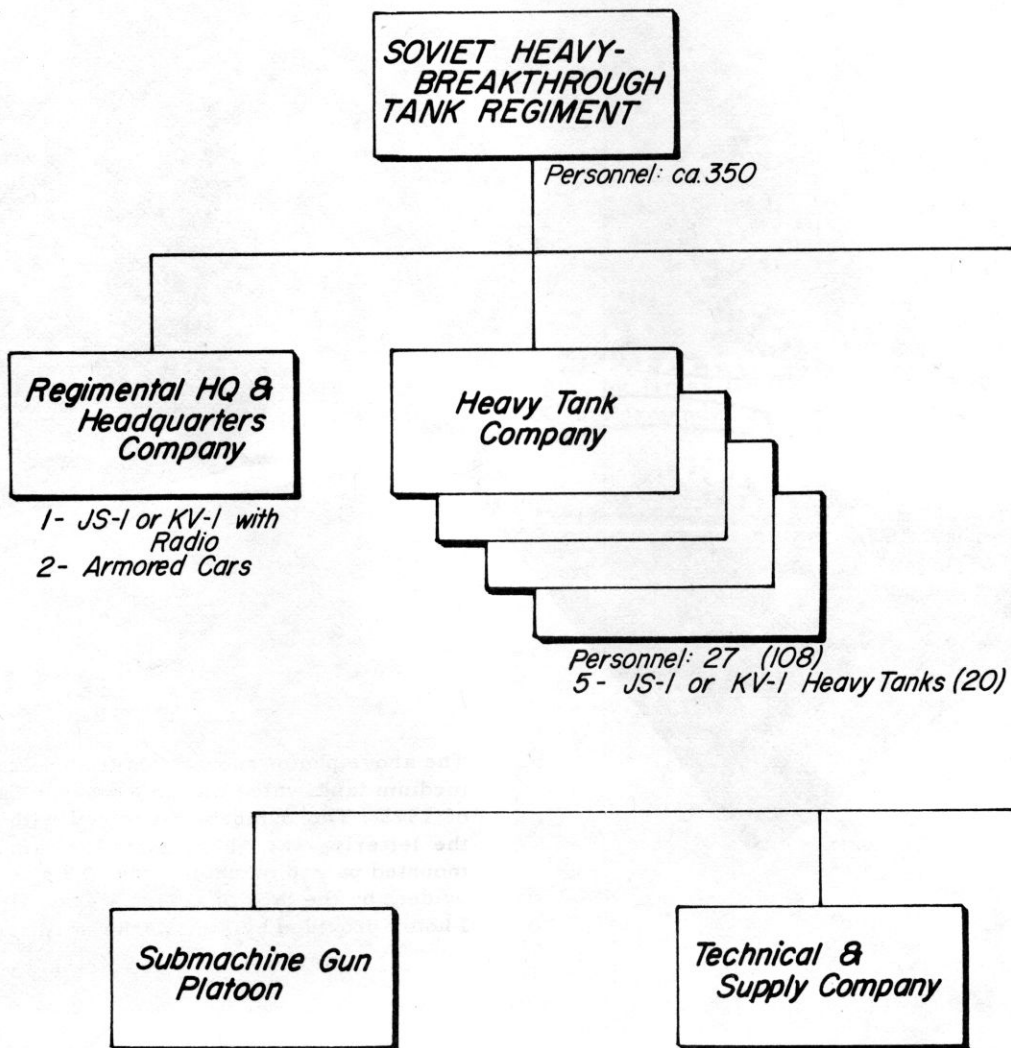
The turret bed-roll bracket (C14) should not have a bottom support (the two curved bars supplied in the kit), but it does need some cloth straps to hold the bed-rolls in position in the rack. Before attaching the bracket to the turret, start by trimming the curved bars

- Continued on Page 11 -

ORGANIZATION CHART:

SOVIET HEAVY TANK 'BREAKTHROUGH' REGIMENT

DATE: SUMMER 1944
by W.Larson & J.Steward



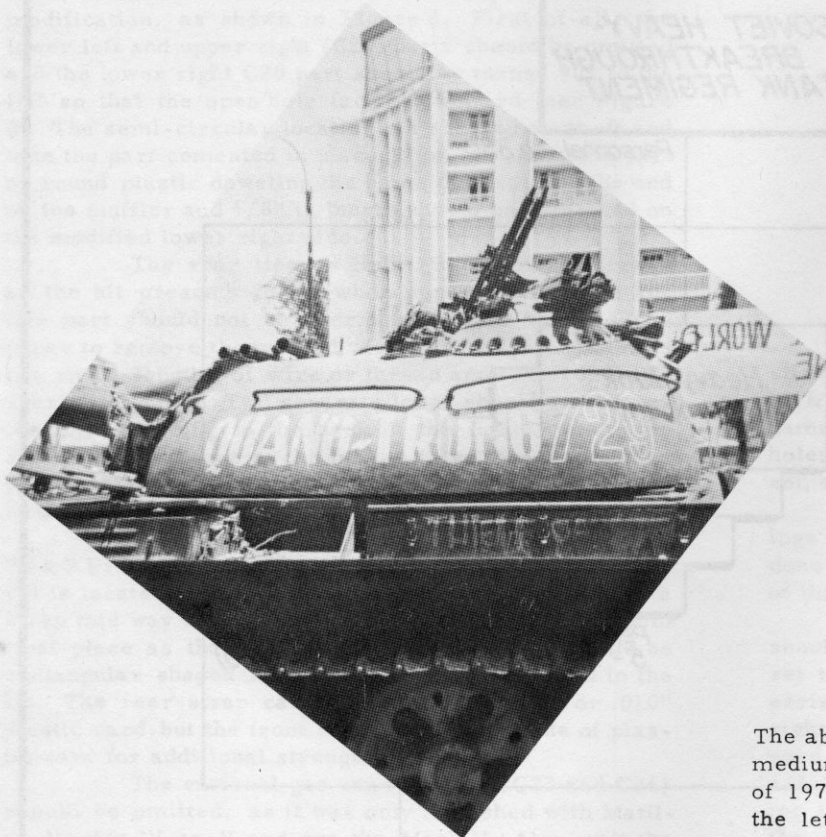
Additional Equipment:
40- Trucks (5 seat)
2- Field Kitchen Trailers

Source: OKW; Abt. Fremde Heere Ost; „Kriegsgliederung eines selbst. Panzer (Durchbruch) Regiment“ (Natl. Archives, T78, R486, Frame No. 6470563)

ARMOR IN PICTURES

"Armor in Pictures" is a photographic-article series to display reader-submitted material on military vehicles and associated models or dioramas. Readers are invited to submit their photographs of vehicles for inclusion in this series. Photos should be packed securely, preferably between sheets of cardboard, to prevent folding, and sent to AFV-G2, P. O. Box 293, La Puente, CA 91747, Attn: "Armor in Pictures". Credit will be given in the photo caption for all photos published and all photos will be returned after publication, along with a copy of the magazine in which the pictures appear.

"Armor in Pictures" is also designed to serve readers as a forum for photo requests. If there's a particular photo reference needed, for modeling, for data, for accurate markings, etc., drop AFV-G2 a note (at the above address) to let the staff know what is required. Our staff will attempt to provide the photos that the readers wish to see, and we'll also provide a list of requested photos that readers are searching for.



The above photos show a captured North Vietnamese T-54 medium tank, which was on display in Saigon in the spring of 1972. The numbers were red with white edging, and the lettering was white. Note the rather unusual cupola-mounted paired machine guns. This is a very early T-54, evident by the lack of a bore - evacuator on the gun tube. Photos provided by Jim Mesko of Akron, Ohio.

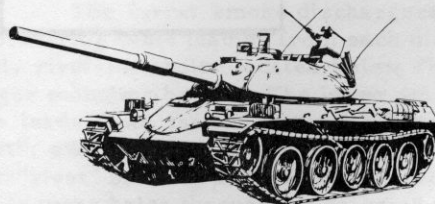


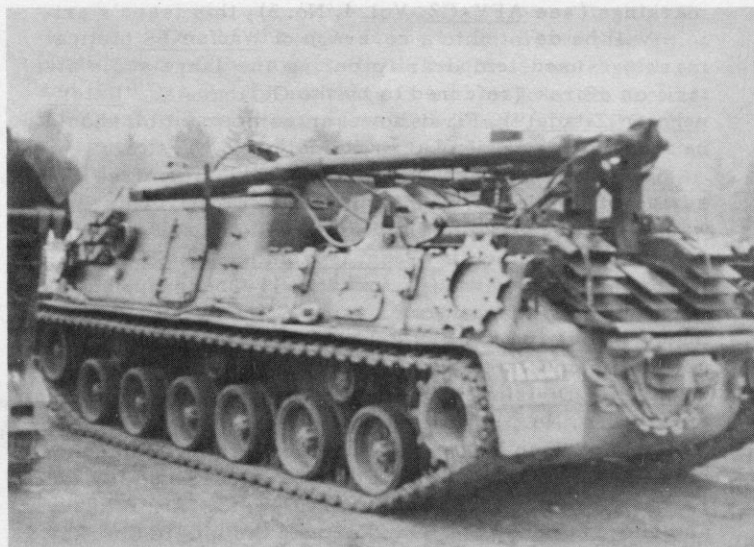
Photo Left: An ex-British "Dingo" Scout Car found rusting-away in an ARVN compound north of Saigon. Mr. Jim Mesko, who provided this photo, states that he found some 4 or 5 of these vehicles around Tan Son Nhut airfield, used as part of the perimeter defense. Note the small turret, which apparently mounts a machine gun.



No, this isn't the real thing! It's a 1:35th scale Panther constructed by James Brathovde of Flagstaff, Arizona, depicting one of the vehicles of the Panzer - Lehr Division, in action in Normandy, July 1944. Note the realistic chipped Zimmerit.



Above: An M-551 "Sheridan" Light Tank of "F" Troop, 2nd Squadron, 2nd Armored Cavalry Regiment on a tank gunnery range at Hohenfels Training Area, Germany. Note how effective splashed mud serves as camouflage. This photo is by Sgt. Michael Reese, currently serving with the 2nd ACR.



Above Right: An M88 Armored Recovery Vehicle (VTR) of the 2nd Armored Cavalry Regiment at Hohenfels Training Area, Germany. The M88 is the standard recovery vehicle of the US Army. Photo by Sgt. Michael Reese.

UNKNOWN VEHICLE ANSWER:

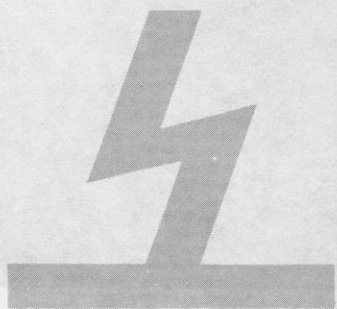
The "unknown vehicle" shown in Vol. 4, No. 6 has been identified by Col. Robt. J. Icks as a field modification armored command vehicle used by the DAK. In the photo, the vehicle had been badly damaged by a British AT gun and subsequently captured. It consisted of an early version of the Panzer IV, up-armored with bolt-on plates. Frontal armament had been increased by adding a second machine gun, fired by the driver, and a captured Boy's AT rifle, seen protruding from the frontal sub-machine gun port. The turret had been remounted on a spacer ring which elevated it above the tank; the turret had been knocked off in the photo. The camouflage shelter quarters were apparently wet to serve as a primitive air conditioner. More information is sought; can any reader help???

TACTICAL MARKINGS of the WAFFEN-

- 10

Part 6

by James Steuard



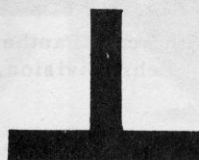
As an outgrowth of new information received after publication of the "Das Reich" divisional tactical markings (see AFV-G2, Vol. 4, No. 5), this issue's article will be devoted to a coverage of Waffen-SS tactical markings used temporarily during the large scale attack on Kursk (referred to by the Germans as "Unternehmen Zitadel"). First, however, some mention should be made of the SS combat organization at the time.

In the late summer of 1942, the first of a series of SS-Korps was formed in France. This unit was un-numbered (since it was the sole unit of its kind) and was designated as "General-Kommando, SS-Panzer Korps". Command was assigned to SS-Obergruppenführer Paul Hausser, a former army officer who had commanded Division "Das Reich". Units assigned to the new corps consisted of the newly converted SS-Panzer-Grenadier-Divisionen "Leibstandarte-SS-Adolf Hitler" (see Vol. 4, No. 3), "Das Reich" (see Vol. 4, No. 5) and "Totenkopf" (see Vol. 4, No. 4). After training and equipping, the corps and assigned divisions entrained for the Eastern Front in the winter of 1942-43. After heavy and successful combat in and around the city of Charkov in the spring of 1943, the divisions were brought up to strength for the forthcoming attack on Kursk.

Although primary-source documentation has not been discovered as verification, it is apparent that the German units massing and preparing for Unternehmen Zitadel were disguised, in order to mislead and deceive Soviet intelligence. Army units had their numbers and designations altered or changed to disguise their location and mission, and all armored formations were apparently told to use totally different tactical markings on sign posts and vehicles. The German high command assumed that Soviet agents were active "behind the lines" and that they reported such markings, and thus, a series of new (and different) markings would confuse the Soviet intelligence-gathering organizations.

Judging by the similarity of the markings that were used by the Waffen-SS units, the new "Kursk"

markings were established by a corps order, and the author is attempting at present to locate a copy of this order. These "temporary" tactical markings are as follows: SS-Panzer-Grenadier-Division "LSSAH" used a tactical marking which consisted of a short horizontal bar with a single short vertical bar joining it, as shown below. The single vertical bar apparently indicated the number one; this number was at that time un-officially assigned to the "Leibstandarte". The sketch below was taken from a photograph of a Panzer IV, Ausf. F2



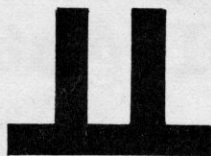
Tactical Symbol - SS-Panzer-Grenadier-Division "LSSAH", taken from a photo of a Panzer IV, Ausf. F2 moving up for Unternehmen Zitadel.

shown moving up to the attack positions early in July of 1943. One of our readers sent us the photo for our use in preparing this article; however, we are honoring the reader's request that we not publish the photo or reveal his name. In the exceptionally clear and sharp photo, the marking appears in white on the hull frontal armor to the left of the machine gun mount.

SS-Panzer-Grenadier-Division "Das Reich" used the tactical markings which were described and illustrated in Vol. 4, No. 5. The photo of the Tiger I of the division is reprinted below, as well as the sketch of the marking, in order to place this tactical marking into the proper perspective with other insignia used at this time. It should be pointed out that the SS-Panzer-Korps did not have the corps-level heavy tank unit that



Tactical Symbol - SS-Panzer-Grenadier-Division „Das Reich“, as previously illustrated, shown for clarity.



was to be a regular feature later. (The corps-level battalion had just been formed; and it was undergoing formation and training in Germany.) Instead, each of the three SS divisions had a few heavy Tiger I tanks in a separate heavy (or "schwere") tank company under Panzer-Regiment control.

SS-Panzer-Grenadier-Division "Totenkopf" used a "temporary" tactical marking that consisted of a horizontal base bar (the common element of these markings) and three short vertical bars appearing above the base. We are indebted to Mr. Armin Sohns for providing the information on the markings used by the "Totenkopf" division during the Kursk attack period. His photograph of a Sturmgeschütz III, of this division appeared in AFV News; the vehicle was shown moving towards the battle area on a road, and the tactical marking appeared in white on the darker camouflaged surface of the vehicle. This tactical marking is sketched below.

At this point, it might prove interesting if we diverge a little, in order to present a brief resume of SS-Panzer-Grenadier-Division armor organization in the 1942-43 period. The divisions each were organized with a Panzer-Regiment of two Abteilungen (or battalions), with its few heavy tanks grouped into the regimental heavy tank company. Each of the Panzer-Abteilungen had one medium and two light tank companies. The light companies were to be equipped with Panzer III's (although in actuality, some companies had mixed Panzer II's and III's), while the medium companies were to have long-barreled Panzer IV's. This armor regiment actually elevated the SS-Panzer-Grenadier-Divisionen to a strength equivalent to (or greater than) an Army Panzer-Division. In addition, the Waffen-SS divisions had an organic Sturmgeschütz-Abteilung, equipped with three batteries of ten or fourteen guns each. This organization was an outgrowth of the early, experimental assault gun batteries that had been assigned to a few of the SS-Divisionen in the period preceding the Russian

Tactical Symbol - SS-Panzer-Grenadier-Division „Totenkopf“, taken from a photo of a Sturmgeschütz III, in action during Kursk offensive.



campaign, and it was provided to give armored artillery support and anti-tank defense for the division.

During the Kursk operation, the SS-Panzer-Korps headquarters also used a "temporary" tactical marking, as reported by a former enlisted man from the Korps-Sicherungs-Kompanie (Security Company). His sketch appears below and shows the tactical marking as a single "Seigrune" (Victory rune) poised on top of the common, short horizontal bar. While this symbol has not been photographically verified, it is interesting to note that a similar (if not identical) marking appears in the Bender-Taylor Waffen-SS book series, where the marking is assigned to the II. SS-Panzer-Korps, the headquarters that evolved from the 1943 period SS-Panzer-Korps. I would be most interested in verifying the existence of this marking in photographs, either on a locational sign or on a vehicle.

Reported Tactical Symbol-Generalkommando-SS-Panzer-Korps, used during Unternehmen Zitadel, from a veteran's letter; unverified.



One of the questions not cleared-up since publication of the article in Vol. 4, No. 5 which discussed the "Das Reich" marking is on how long the tactical "temporary" markings remained in use after the conclusion of "Unternehmen Zitadel". Shortly after the end of the operation, SS-Division "Leibstandarte-SS-Adolf-Hitler" moved from Russia to Italy, where photos show the unit using the key-and-shield marking. Did the other two divisions also change immediately? I have not found an answer, if they immediately changed, to the puzzle of the Koku-Fan photograph showing the one-ton half-track passing a knocked-out Churchill tank, apparently in France in mid-1944.

Modeling the "Matilda" Infantry Tank (Continued from Page 6).

off, using a sharp X-acto knife, and then sand the "L" shaped bracket so that there is no trace of the bars remaining. Cement the "L" shaped bracket to the turret and let dry before installing the hold-down straps. The straps should be constructed from paper, to give the proper scale thickness. The bottom of the "cloth" strap is fastened to the top of the short end of the "L" bracket, and the top of the strap connects to a small projection located 1/8" from the top of the turret roof. This projection is constructed of .020" plastic card, cut to 3/32" in length and cemented in place. After converting the storage bracket (rack), the bed rolls should also be converted for additional realism. The two bed rolls (parts C29) should be discarded, and new ones constructed from tissue paper (or fine-weave cloth). I used white glue (or liquid glue could be used as well) to give body to the new bed rolls.

The antenna on the rear of the turret also needs some detailing help. First of all, discard parts C1 and C3. New parts should be made from .020" plas-

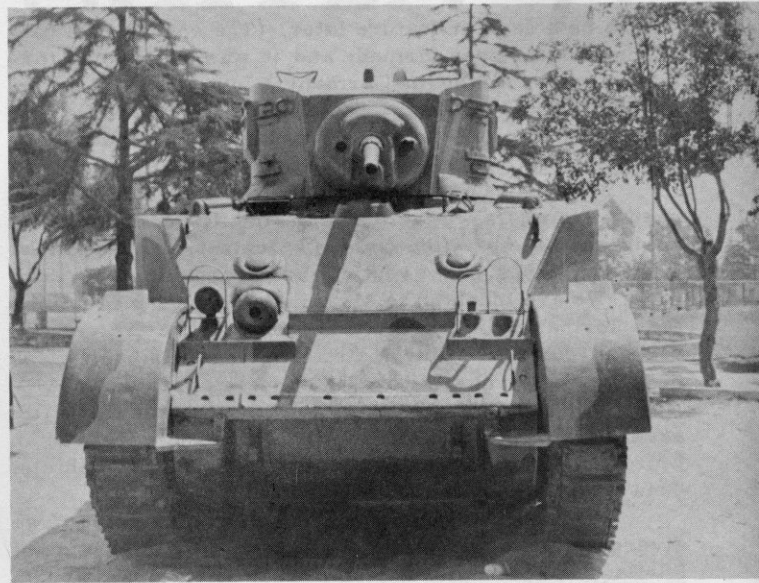
tic card for the platform, and .010 plastic card for the support arms. I shaped a small blob of "Green Stuff" into a new antenna base. For a guide to the size, shape and mounting locations for the new "folding" antenna, refer to Figure 2 (on page 5). If done carefully, a fine wire (or thread) can be attached to the bottom of the platform directly under the antenna base. This antenna cable then should lead through the rear of the turret.

A last note. Before proceeding with the paint job, give some consideration to the markings to be used. Remember that almost all of the Matildas saw service before 1942 in the North African desert or in Britain. In general markings were sparse; readers are referred to the Color 'n Camouflage article on the Matilda that appeared in AFV-G2, Vol. 4, No. 6 for more details. One cautionary note on Tamiya's decal sheet; the various divisional insignia (or formation badges) represent units that never used Matildas. so take some care in the selection of markings.

CLOSE-UP:

The U.S. M-5 'Stuart' Light Tank

BY STEPHEN GIFFORD

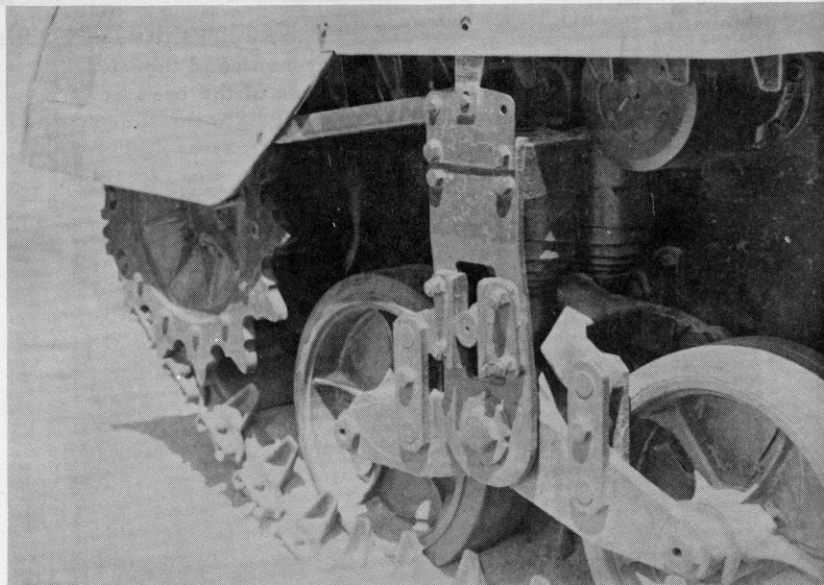


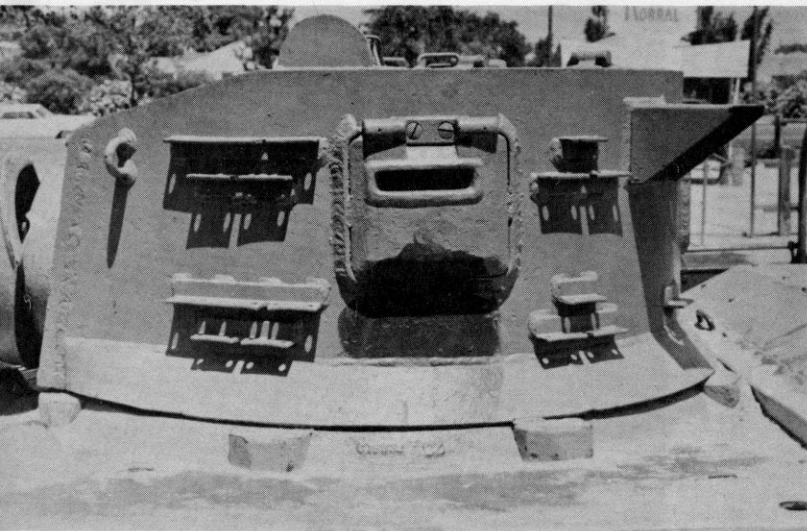
Above & Right: Frontal views of the M5 Stuart, showing the angled frontal surfaces. Note the raised rear engine decking and the full sand skirts, which helped to deflect dust downward. This skirting was quite often discarded by US Army tankers in the field. Except for radio stowage and the turret rear, the M5A1 was identical to the M5.



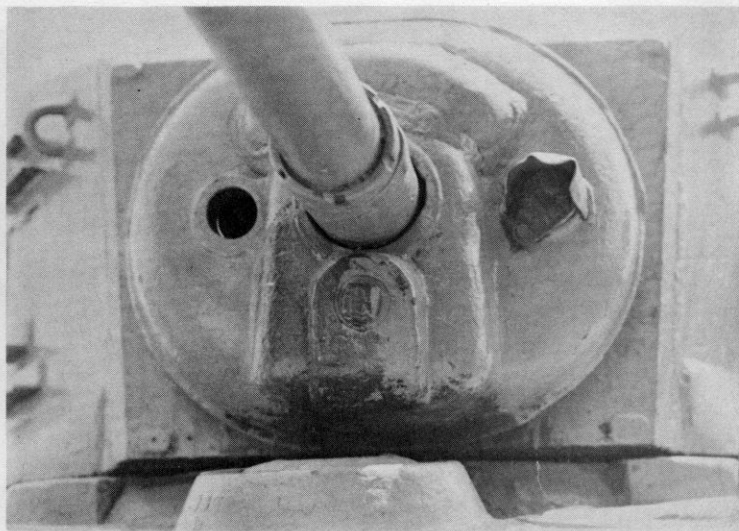
Above: A rear view of the Stuart hull, showing the access doors to the engine compartment. The M5 series utilized two commercial Cadillac engines and hydraulic transmissions, and a top speed close to 40mph. Right: A view of the left drive sprocket and road wheel assembly. The Stuart track had outside guides and the road wheels and return rollers rested between these guides. The drive sprocket teeth engaged the track between the end connectors which coupled track shoes together. 1:32nd scale drawings of an early M3 Stuart appeared in AFV-G2, Vol.2, No.8; the M3 had an identical suspension to the M5.

One of the most-wanted large scale armor kits, to judge from letters, would be a model of either the M3 or M5 Stuart Light Tank. This article should help modelers by providing detailed photos of features of an M5 Light Tank. This vehicle is on display (in a children's sand box) in the City Park of South Gate, California. As can be seen, the vehicle is in relatively good condition, missing mainly the machine guns and the left side headlight. It appears camouflaged in the photos, but the spots of color are green, applied over rust points, over a basic blue gray paint finish. It is obvious that the paint has been applied for maintenance purposes only, and does not represent an actual paint scheme. Tanks are fairly sturdy, as is evidenced by the lack of damage done to the vehicle. Other than bent periscope protectors, there is little on the exterior of the tank to suggest that it is other than fairly new and complete. This light tank was typically used in Normandy in 1944.

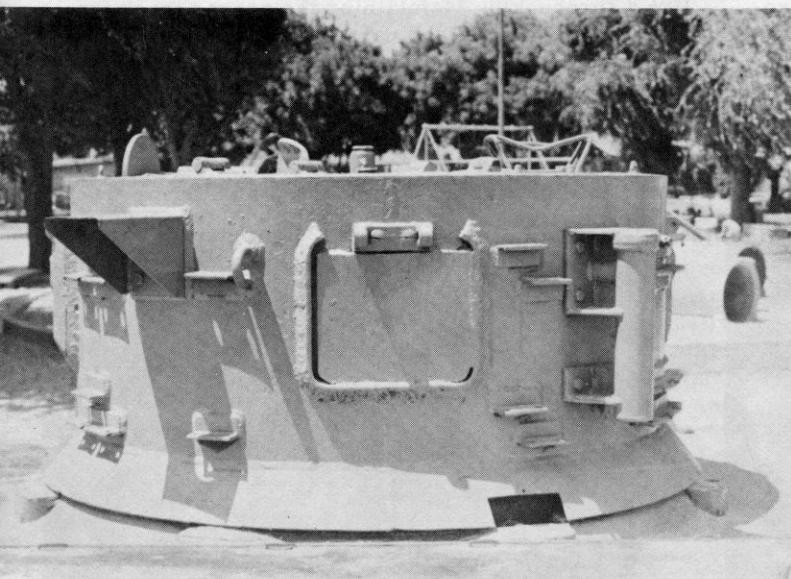




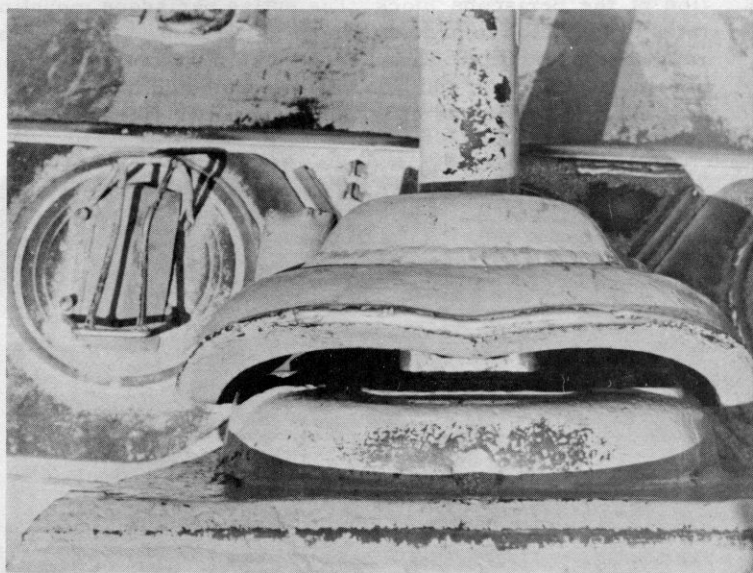
Above: A left side view of the M5 turret, showing the pistol port and the brackets for spare track sections. Note the radio antenna bracket on the left rear and the turret lifting ring near the mantlet. The vision slot in the pistol port held a device known as a "Protectoscope" to protect the viewer.



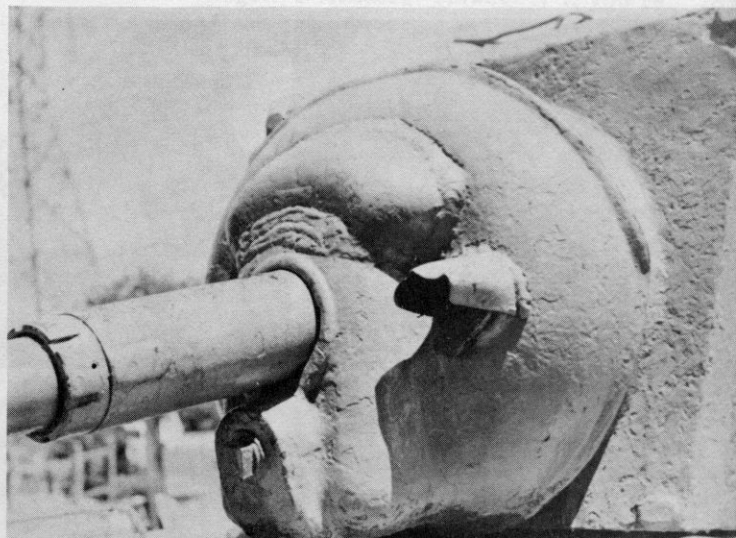
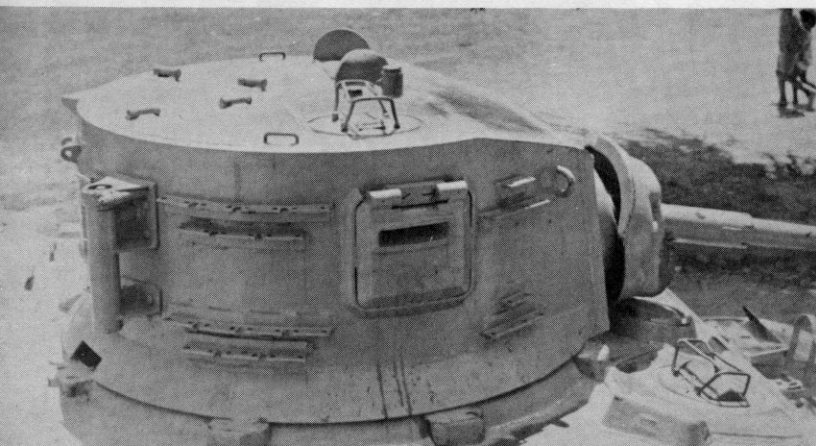
Above: A front view of the 37mm gun mantlet. The hooded opening on the right is for the gun sight, while the hole on the left is for the coaxial machine gun, a Browning Caliber .30 M1919A4.

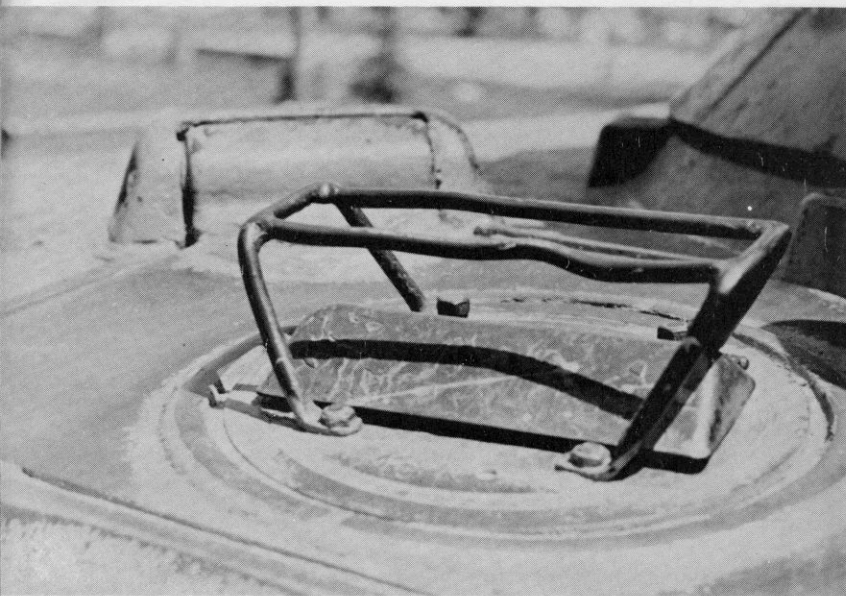


Above: A turret rear view. The tube-like support on the right was for the externally-mounted .50 caliber MG. The pistol port has been replaced by a simple flat plate not original to the vehicle. Below: An elevated right side view, showing roof detail. The turret hatches were designed to lie flat after opening, one hatch lying under the other. Note the commander's rotating periscope and the side protectors for the gunner's periscope, which did not rotate.

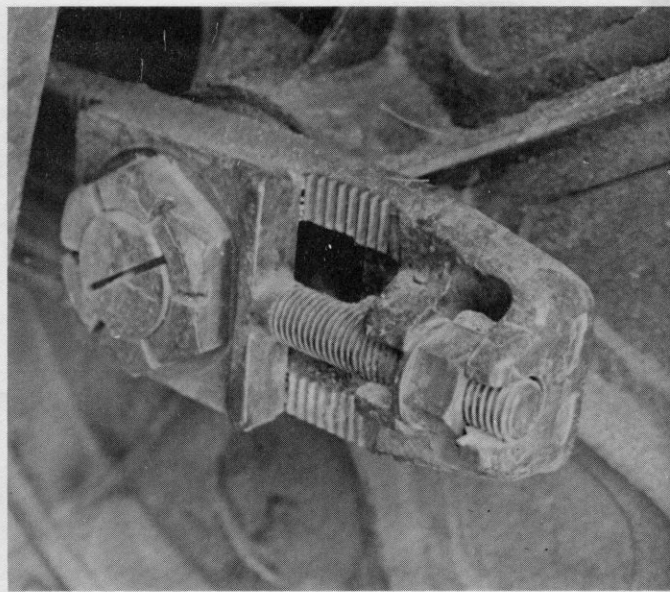


Above: An overhead view of the turret mantlet, showing the complex curve on top. Below: An angled view of the gun mantlet. These views should be of assistance to modeler's attempting to scratch-build this vehicle, and provide some help in shaping the gun mantlet.

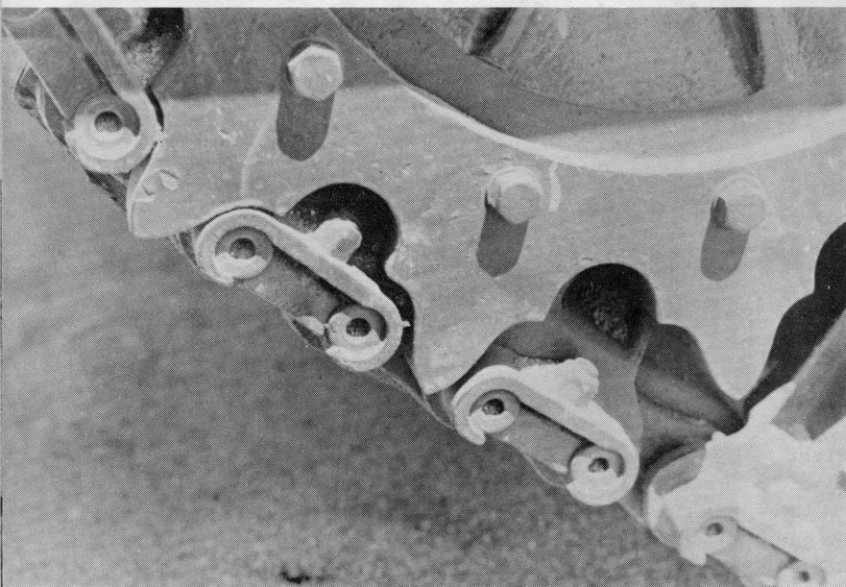




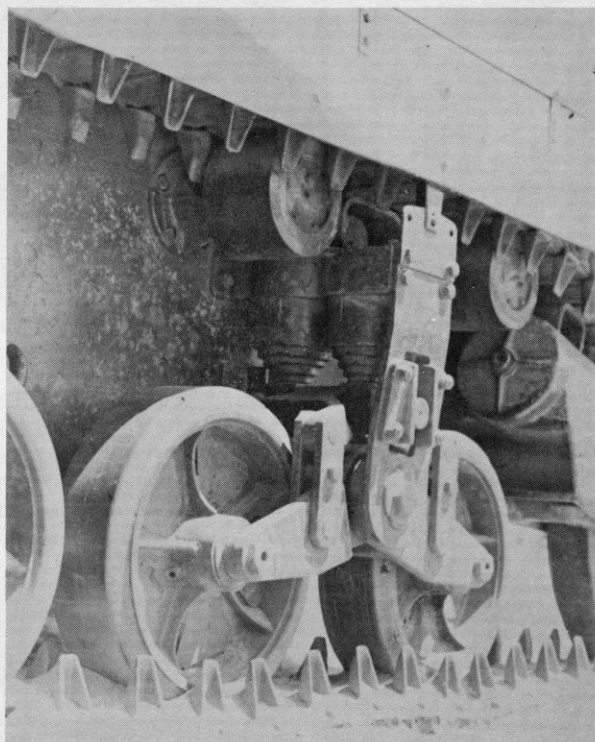
Above: A detailed view of the bow gunner's hatch and periscope mounting (which is identical to that of the driver). The wedge-shaped cover (beneath the protecting tubes) is raised for insertion of the periscope block. The entire periscope mounting rotates in the hatch to provide vision to the side. The removal arrangement permitted easy replacement of cracked or broken periscope blocks; in addition, the blocks could be removed from the vehicle when it was undergoing repair or storage.



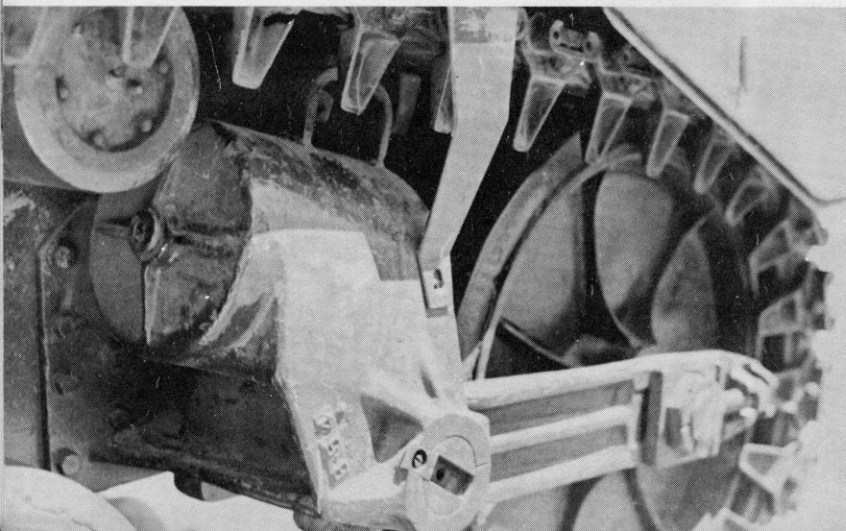
Above: A detailed photo of the inside of the trailing (or rear) idler tensioning device, which permits adjustment of the track tension, operating somewhat like a turnbuckle. Maintaining the proper track tension was an important part of maintenance, in that it prevented thrown tracks, or decreased wear on the suspension components.



Below Left: A view of the drive sprocket teeth and how they engaged the track. Note the shape of the teeth; this shape was common to all US Army track laying vehicles used during World War II.



Above: A photo of a complete road wheel (or bogie) assembly. Note the two internal coil springs and the return rollers which are supported by brackets. Left: The rear (or trailing) idler assembly is shown here from the outside. A common feature of all versions of the M3 and M5 Light Tank, this idler rests on the track, sitting on the ground. Note the track guide between the idler and the return roller.



Historian's Notebook

BY JAMES STEUARD

In AFV-G2, Vol. 4, No. 6, this column discussed the availability and suitability of microfilm records, specifically the captured war records material available from the National Archives. Judging by readers' comments, the subject of the historian's use of microfilm should be more thoroughly explored.

While microfilm itself has been with us for a number of years (since prior to World War II), it has only been recently that this material has been recognized and utilized by librarians and historians interested in "data storage and retrieval", and the use of microfilm by both professional and amateur historians has added a new dimension to the acquisition of new material to their research libraries. Perhaps a little glimpse into the advantages (and disadvantages) of microfilm as a research tool will help some of our readers.

First of all, there are two basic sizes of microfilm: 16mm and 35mm. The former was the initial size to be used, and is has now faded from use due to the small size of the "picture" (which is generally referred to as a "frame") and the high degree of magnification necessary to use the film. Occasionally, one finds a piece of 16mm microfilm equipment for sale on the market, quite cheaply, and readers are cautioned that conversion to 35mm can be expensive and time consuming. 35mm microfilm comes in two different forms; either as a "roll" or as a "microfilche". While roll film is the best-known and widest used, the microfilche system is often used in the engineering and manufacturing industry. A microfilche consists of (usually) one "frame" of microfilm, mounted in an IBM or other data processing card. Using this system, an industrial firm can store and handle engineering drawings and plans using data process sorting equipment. Microfilche cards are viewed with special projection equipment, and most microfilche viewers are not compatible with roll microfilm systems.

Once a researcher acquires a roll of microfilm, the next question is concerned with how to view the material. To see what is on a microfilm frame, one needs a "reader". This is a machine which projects light through the frame, usually onto a white metal or ground glass screen. The individual frame is magnified up to eighteen times, for easy viewing. Microfilm readers can be quite expensive to purchase, although used ones can sometimes be found in good condition for a reasonable price. If you have acquired a good collection of microfilm rolls, you might give some thought to purchasing your own reader, in order to save time and hassle at the local library. Yes, I said library. . . . In this modern day, virtually all college and university libraries, most local public libraries (of any size), and even some high school libraries have added one or more microfilm readers to their facilities. Most libraries now maintain their back issues of magazines and newspapers on microfilm, at a great savings in space and money, and their readers are available for use by the public. Some libraries even have combination readers and printers, which, for a fee (usually 10¢) will provide the viewer with a copy of one frame, printed on paper. If you're lucky enough to find such a combination reader and printer, you'll be able to carry home some of the goodies in a form that can be used by anyone.

Microfilm as a Research Tool.
Is it something you can use???

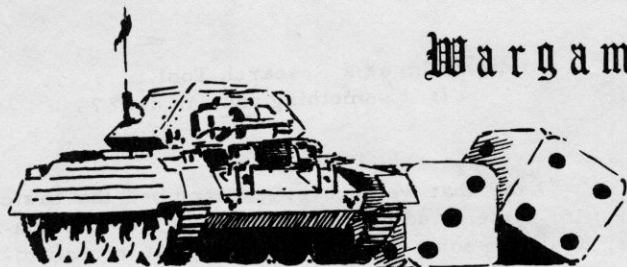
Now that we've briefly described the basic microfilm system and how you can easily view the contents, what are some of the advantages that microfilming can offer to an amateur historian (or to a professional for that matter)? How can you use the microfilm system to add to your library or provide you with research materials?

The greatest reason to employ microfilm is that you can add items to your collection or library that are rare, out-of-print, or otherwise completely unavailable. Let me illustrate with some examples.

Would you like to have a complete collection of "Armor" magazines in your library? Outside of the fact that such a collection would occupy four feet of shelf space, the cost, time and persistence needed to find all these "back issues" would stop all but the most dedicated enthusiast, right? Well, there's an easier way. Most of our readers are perhaps unaware that University Microfilm (an Ann Arbor, Michigan based branch of the Xerox Corporation) sells microfilm copies of almost all magazines and periodicals (from the "New York Times" to "Armor" magazine), and the cost is quite reasonable. (While I'm not sure of the exact cost, you can probably get two or three years of "Armor" for under \$10.00 in cost.)

Well, how would you like to obtain a rare and out-of-print U.S. Army unit history, of say the 713th Tank Battalion in World War II.? I know a lot of collectors that would really "dig" finding such a history, and they'd pay up to \$25.00 a copy, provided they could find a copy. Again, there's an easier way. By checking the Library of Congress catalog, you'll find a good many rare regimental histories (including the one cited above) and you can order microfilm copies of these at approximately 7¢ per page. (That's under \$10.00 for a 125 page unit history.) If you'd like more information on the procedures for purchasing Library of Congress microfilm copies, I'd suggest that you drop them a line requesting microfilming information and prices. Other libraries offer essentially the same services. For example, the Hoover War Memorial Library at Stanford University has an excellent collection of rare books and research materials on war, and these can be purchased on microfilm. If you're the first person to order a specific book, it will cost quite a bit, 'cause you'll also pay for the first "negative" filming. However, if you're the second or third, the price becomes fairly reasonable as you're only purchasing a positive print and not paying for Hoover's "negative" microfilm. Other libraries have similar procedures.

Of course, as with any reference material, there are some problems of storage and use (which can be termed disadvantages). First of all, the film is somewhat sensitive, and should be stored (when not in use) in a cool, dry place. When you use the film, always be careful to clean the film carrier of the reader (where the film passes through) to prevent scratching of the film by dust. However, if an owner takes reasonable care of his microfilm, it should last at least as long as an equivalent book. What counts, however, is that you can acquire out-of-print and rare books that you would not otherwise have a chance to use or even see.



Wargame Review

El Alamein, Battles in North Africa, 1942

Game Designer: Simulations Publications, Inc.
44 East 23rd Street
New York, NY 10010

Price: \$7.00

Game Reviewed by: Wm. E. Platz

General Comments: As an ardent North African buff, I tend to greet any desert-oriented game with a great deal of enthusiasm. However, in the case of S.P.I.'s latest release, I must admit mixed feelings. Perhaps this is because I had such high hopes for the game.

1. Physical Equipment - Rated Fair.

a. Mapboard - This is done in the standard S.P.I. manner, a two-color map printed on heavy paper with an overall size of 22 x 28 inches. Nearly 1/3rd of this area is devoted to the order-of-battle charts. Upon comparison with the official South African maps of the battlefield, a number of inaccuracies appear. In the first place, the "Kidney Hill" feature (Square 2809) is not a hill at all, but is a depression and is of such little significance that it was frequently misplaced by actual units assigned to capture it. Additionally, a number of features are completely missing (e.g. the El Daba railroad station (Square 1803), the Qattara Escarpment which runs along the northern edge of the Qattara Depression, and the "box" at Naqh Abu Dweiss (Square 2425). Also the "Ragil Depression" should be extended to the northwest to include Squares 3019, 3120 and 3220.

b. Counters - These are excellent in physical quality, mounted on solid die-cut cardboard and printed in three colors. There is an adequate supply of units, including a large number used only in "what if" game variations. Additional counters are provided to reflect changes in the strength of the principal units during the various scenarios. There are a few problems with the orders-of-battle (which will be covered below); and one might quibble about considering the Italian "Folgore" Airborne Division (186th and 187th Regiments) and the German "Ramcke" Parachute Brigade as mechanized units, since both relied principally on foot-power for transport. Nevertheless, the designers have managed to provide engineer and 88mm Flak units with an accurate representation of their combat value. Supply and minefield counters are also included.

c. Accessories - One of this game's strong-points is, oddly enough, its box. This is fitted with covered plastic counter trays which are divided into 24 compartments for ease of storage. Two charts are also provided - one showing the "what if" variations to the order-of-battle, and the other with the combat results table and terrain effects chart. These are helpful, however, it would have been nice if a quick reference on the minefield rules had been added.

2. Rules - Rated Good to Very Good.

a. Mechanics - "El Alamein" utilizes the well tested system of movement and combat resolution that

is employed by Avalon-Hill's *France 1940* and many of the newer S.P.I. games. This involves multi-phased movements with great advantages for armored and mechanized units, who have additional movement after the combat phase. This arrangement is particularly appropriate for the desert war.

Combat, too, follows conventional lines; however, the Combat Result Table merits some examination. The CRT is arranged so that the elimination of a unit is extremely difficult (6 to 1 odds are necessary before there is even a possibility of elimination); and exchanges are a definite peril to the attacker.

There are a number of special rules included which deserve some attention. First of these is the stacking rule which applies movement penalties to units joining or leaving a stack. The second is the supply rule which is rather complex, but gives an excellent simulation of desert supply problems. On the negative side is the movement restrictions and combat effect for "depression" areas. While movement would be limited by the rough terrain, combat strength would be increased, not halved as indicated, due to the cover. Indeed, depressions offered substantially the same advantages to the defense as ridge lines. To state that units in a depression are isolated is incomprehensible. Perhaps the designers intended this to apply to Qattara, where the soft sand would make it reasonable.

b. Victory Conditions - These are the weakest point of the rules. Victory is a matter of bettering the historical outcome, with that determined by the number of victory points gained by the Axis. It is not possible for the Allies to score victory points, and thus it is conceivable for the Axis to score a victory even when all of their units are destroyed and the Allied forces only moderately damaged. This seems a little unrealistic!

3. Scenarios & Game Variations - Fair to Good

a. General Comments - The game provides 3 separate scenarios (2 of 7 turns and 1 of 15) based on the 3 principal engagements between July 1 and November 7, 1942. Each scenario is independent of the others, and there is no provision for joining them into a "campaign game". Each has its own order-of-battle, although only the "October Scenario" is provided with identification of the historical units; and separate sets of victory conditions are also provided.

b. The July Scenario represents the approach to the Alamein line during the first week of July 1942. At this time both sides were severely weakened after heavy fighting around Tobruk and this is well illustrated by the smaller combat values. In general, the orders-of-battle are accurate, however, an additional 2-10 reconnaissance unit should be added to the German forces (representing *Aufklärungs-Abteilung 580*.) This is positioned at Square 2822. Another point of consideration in the original set-up is the positioning of the Allied 2-8 at Square 3011. This apparently represents the armored car screen composed of three South African regiments; however, as these units operated over a much wider area than that accounted for in the scenario, to place them so far forward is unrealistic. A more reasonable positioning would be Square 3411.

There is one special rule for this scenario which should be modified. This is the regulation concerning the defensive "boxes". The restrictions placed on the Allied player by this rule cannot be justified by

- Continued on Page 32 -

AFV INQUIRY

Armor Question from Readers, with Answers from the AFV-G2 Staff.

Question: Was the British "Firefly" (Sherman C) with the 17-pdr gun ever used by American units during World War II?

Answer: At least one Sherman VC "Firefly" was provided to the U. S. Army and it underwent testing at the Ordnance Center at Aberdeen Proving Ground, Maryland (and it can still be seen there). However, there is no evidence that "Fireflies" were used in combat by U. S. forces. Indeed, there is ample evidence to indicate the contrary. The British never had enough of the 17-pdr armed tanks to equip their own units and it would be unlikely for them to share the few vehicles available with their allies. Nor were the Americans likely to ask for them. At the same time that the British were developing their "Firefly", the U. S. Army was concluding testing on the feasibility of re-arming Shermans with a longer tube 76mm gun with a higher muzzle velocity and greater penetration. This re-arming could be accomplished in the field by Ordnance maintenance units, and the improved armament was comparable with that of the British "Firefly". It entered service only a few months after the British introduced the Sherman VC. Furthermore, to adopt the 17-pdr would have meant a substantial logistical problem for U. S. units, as it would have meant stocking a foreign type of ammunition, and spare parts for a very few vehicles within the unit. While we hesitate to say "never", it is reasonably certain that no "Fireflies" saw combat with U. S. tank units.

On the other side of the coin, however, there exists photographic evidence to indicate that captured Sherman "Fireflies" were used by the Germans. There are a few photographs of "Fireflies" undergoing comparative testing (with an M3 Grant, an M4A1 Sherman and a German Panther), and one or two pictures showing a white, snow-camouflaged "Firefly" with German insignia, apparently captured during the Ardennes offensive, after being abandoned by its crew.

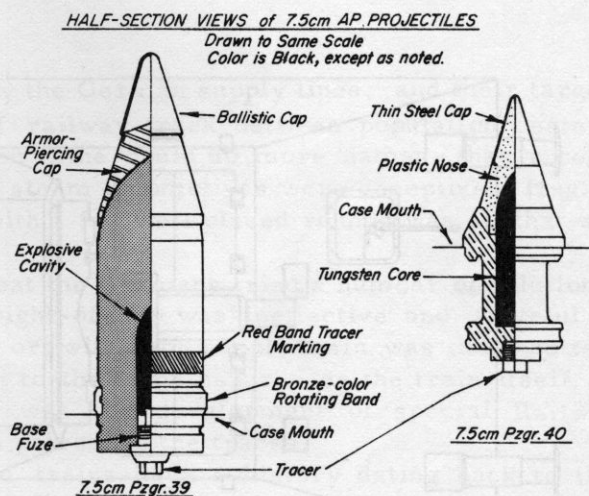
Question: Could you please provide some additional information on the German tungsten-carbide cored "AP40" ammunition? Was it used late in the war as some writers deny?

Answer: The German "Panzergranate 40" ammunition was of special construction, containing a very hard tungsten-carbide core (as mentioned in some detail in our series of articles on German ammunition). Being far lighter than the conventional AP Shot, the Pzgr. 40 round (in all cases) had a higher muzzle velocity, and the extremely hard core gave greater penetration at the close and medium ranges. At longer ranges, the lighter projectile rapidly lost velocity and effectiveness.

Numerous sources indicate that there was a shortage of tungsten in Germany during the war. As tungsten-carbide was also used extensively in machine tools, German ammunition production had to share the available tungsten with this industry. There are indications that the German supply of tungsten was extremely critical in the last year of the war, however, conversations with veterans indicate that Pzgr. 40 ammunition

was still being supplied to tank and anti-tank units as late as April of 1945. Since it was in short supply, however, the German high command put some rather severe restrictions on its use. First of all, it was restricted from use on enemy armor that could be easily defeated by more available ammunition; therefore it was rarely seen on the western front, where all Allied vehicles could be handled by the Pzgr. 39 ammunition. On the eastern front, it was "reserved" for use against the Josef Stalin heavy tank series. A further restriction limited the ranges at which the ammunition could be used (generally to under 1000 meters). Some sources have indicated that the Luftwaffe used Pzgr. 40 rounds in their airborne anti-tank weapons systems (the Hs-129 and Ju-87G for example), but in fact, Luftwaffe manuals prohibit useage of tungsten-carbide ammunition in aircraft, since the supply was critical and since pilots could not guarantee hits with every round.

The drawings below provide a comparison between the Pzgr. 39 and the Pzgr. 40 rounds; the drawings show rounds for the 7.5cm weapons (all of which used interchangeable projectiles). Note that the standard color for anti-tank or armor-piercing ammunition was black with white (or yellow) markings.



Question: Can you provide an easy identification for the various types of US Army halftracks?

Answer: First of all, manufacturing differences are easy. The White, Diamond-T and Autocar produced versions had rounded front fenders and squared-off body rear. The International Harvester produced versions (which were used by U. S. troops only in the United States (for training) and were supplied to foreign countries as Lend-Lease) had flat front fenders and had rounded rear body corners.

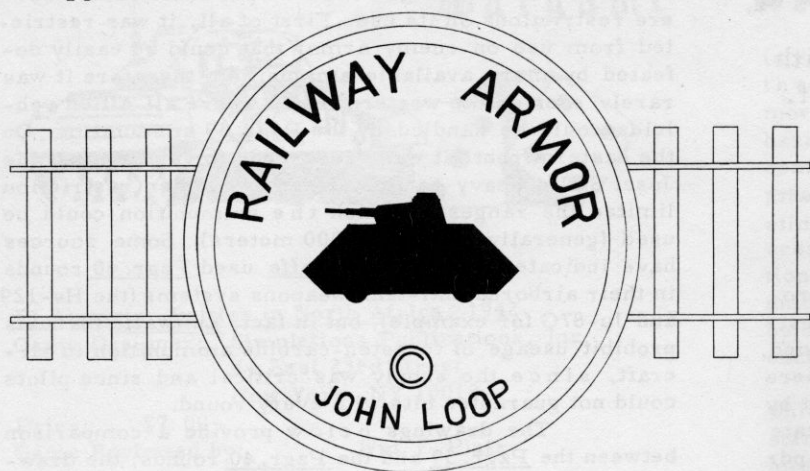
The early M2 and M2A1 halftracks can be recognized by their shorter body which extended rearward to a point just above the rear of the rear idler wheels. They also had a ledge-type storage rack on the rear.

The later M3 and M3A1 halftracks are recognizable by their lengthened rear body, which was extended to provide more room (for a larger size rifle squad); the longer body extends well past the tracks.

M2's and M3's both utilized an internal rail to support the vehicular machine guns, which usually consisted of one .50 caliber and two .30 caliber guns. In these vehicles, a center post in the body rear held the radio antenna.

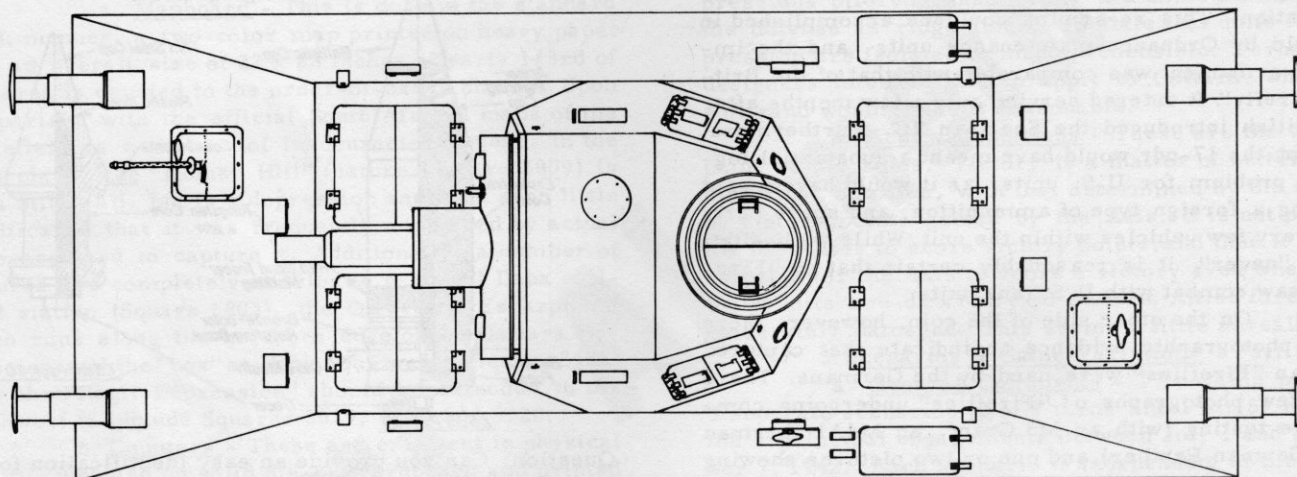
M2A1's and M3A1's had a machine gun "tub" located over the passenger's side of the driver's compartment, with the .50 caliber MG on a ring mount.

The German Panz Armored Tr



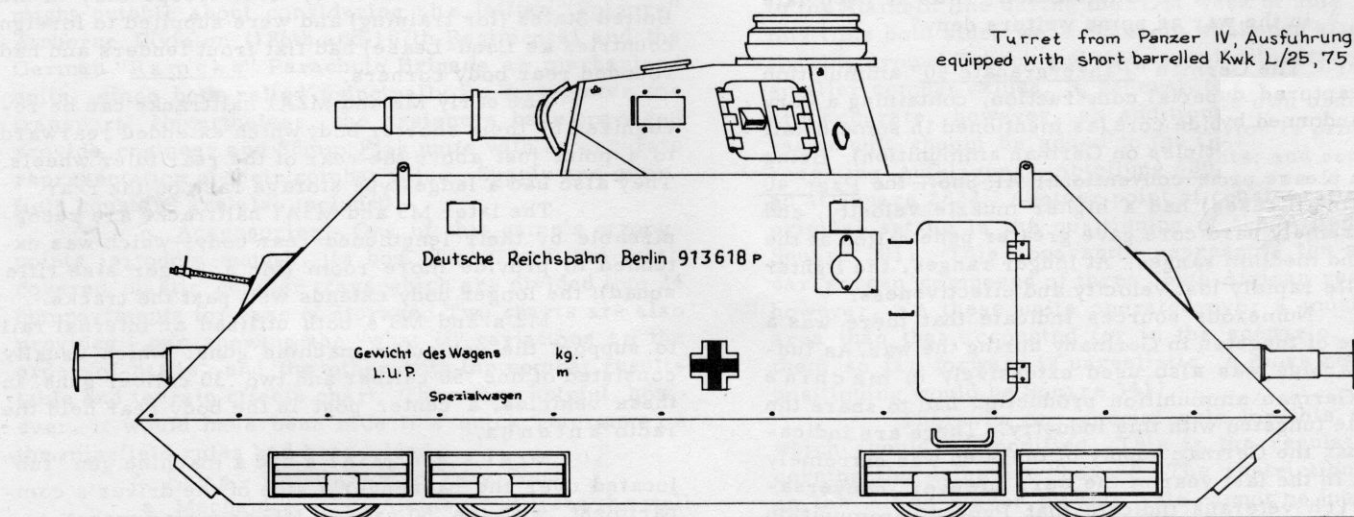
When distances are great, gasoline little more than a quagmire looking for a victim, the German Wehrmacht found itself forced to depend on the railroads for its supply lines. The German side with its forbidding climate and poor roads presented an unbelievable magnitude. Trains were the particularly vulnerable form of transportation. Railroads; they can not change their routes or take alternate lines; likewise, damage to the tracks themselves can in some cases even result in a wrecked train. Trains are an ideal target for hostile aircraft; however, the greater danger threatened the supply lines...

In the wake of the German assault, small Russian units became isolated far behind the front, later joined by growing numbers of local peasant guerilla formations.....



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SCALE OF FEET

Turret from Panzer IV, Ausführung N
equipped with short barreled KwK L/25, 75 mm gun

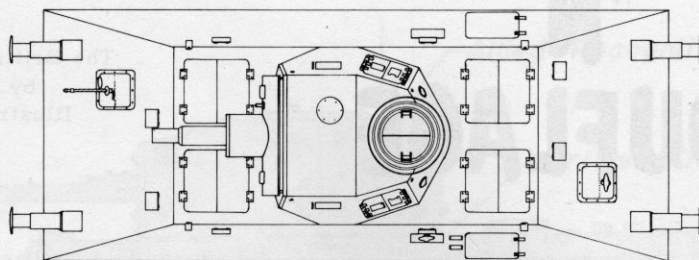


Herman H. Darr

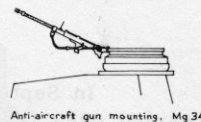
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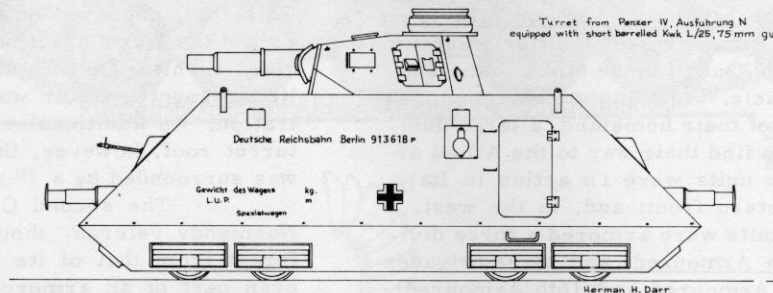
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l enemy lines. These were
s and specially trained Soviet



SCALE OF FEET



Anti-aircraft gun mounting, Mg 34



Turret from Panzer IV, Ausführung N
equipped with short barreled KwK L/25, 75 mm gun

Deutsche Reichsbahn Berlin 913618

Gewicht des Wagens
L.U.P.
Spezialwagen

kg.
m

Herman H. Darr

4'-8 1/2" Gauge

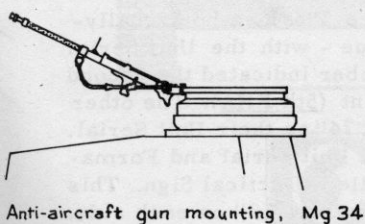
Their mission was to destroy the German supply lines, and their targets were the lonely stretches of railway track between population centers. Here a twisted rail or hidden mine could do more damage than a regiment of artillery. The large steam locomotives were deceptively fragile, and a well planned ambush with a few well placed rounds was all that was necessary.

To counter this threat the Germans tried a number of solutions. Posting sentries along the right-of-way was ineffective and wasteful of manpower. Providing an escort with each supply train was little better, since the escort was subject to the same hazards as the train itself. A more satisfactory answer was the development of special Railway Armored Vehicles for use in patrolling the tracks.

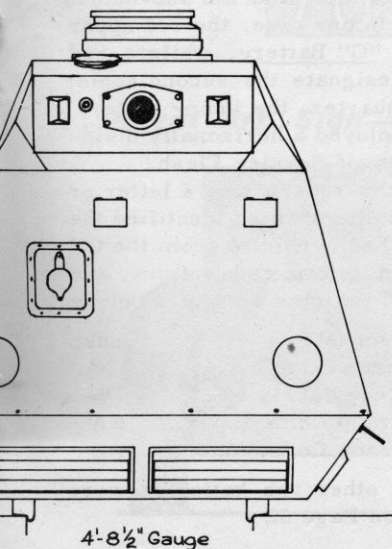
Armed and armored trains have a history dating back to the American Civil War, and the Germans possessed a wide variety of RR ordnance by the war's end, ranging in size from the huge complex of trains used to bring their 800mm Railway Gun "DORA" into action to the small armored car shown here. This particular example, however, was ideal for fighting Partisan ambushes and general security duties. It consisted of a small diesel locomotive with light armor and mounting a tank turret taken from a Pzkw. III Ausf. N. (Note: the drawing incorrectly describes this as a Pzkw IV turret...ed.) Exact figures for the armor thicknesses are not available, however, it is unlikely that the hull exceeded 30mm.

The Panzer Draisine (Small Unit), as this vehicle was called, was armed with a 7.5cm KwK37 L/24 tank gun in its turret and three 7.92mm MG-34 machine guns - one co-axial in the turret, and two mounted as shown in the hull. Additionally, gun ports were provided in a variety of positions for the personal weapons of the six to eight man crew. Stowage was provided for 64 rounds of 7.5cm ammunition and 3,450 rounds for the machine guns.

Machines such as this one remained in service until the end of the war. The model for our drawings was captured by U.S. forces at the end of hostilities and remained in the Augsburg, West Germany, Railway yards for some time before being broken up and sold for scrap iron in 1945. However, armored rolling stock is still being used today in the Republic of South Viet Nam.



Anti-aircraft gun mounting, Mg 34



4'-8 1/2" Gauge

COLOR 'N CAMOUFLAGE

The British Cromwell Mk.VII Tank

by William E. Platz

Illustrated by S. R. Cobb

In September 1939, German and Soviet tanks presided over the destruction of Poland's military forces; however, 59 months later the situation was reversed with the tanks of the 1st Polish Armoured Division slamming shut the last escape route of Hitler's Seventh Army at the Falaise Gap. One of these tanks is the subject of this month's article.

After the fall of their homeland, a large number of Poles managed to find their way to the Allied armies. By 1944, Polish units were in action in Italy, France and on the Eastern front; and, in the west, a large portion of these units were armored - three divisions (1st, 2nd and 4th Armoured) and three brigades (2nd Army Tank, 2nd Armoured and 16th Armoured). While most of the Polish formations fought in the Mediterranean Theater, the 1st Polish Armoured Division was formed in Scotland during 1942 from elements of the 1st and 4th Polish Infantry Divisions that had fought in France in 1940 and subsequently escaped to England. The Division was composed of the 10th Polish Armoured Brigade, the 3rd Polish Infantry Brigade, four Artillery Regiments and an Armoured Reconnaissance Regiment - the 10th Pulk Strzelcow Konnych (10th Mounted Rifles). The Division was organized according to the British establishment, and was originally equipped with Valentine tanks. However, by August of 1944, these had been replaced by M-4 Shermans in the Armoured Regiments and by British Cromwell Mk.VII's in the Armoured Reconnaissance Regiment. The Cromwell shown on the opposite page is from Major Maciejowski's 10th P.S.K.; and it saw service in Normandy with No.1 Squadron. The tank was painted in British Dark Green overall, and its markings followed the British system.

The formation sign for the Division appeared on the tank's hull front and rear. This consisted of a black winged knight's helmet set on an orange-yellow circle and outlined in white. (Another variation called for the insignia to be superimposed on a khaki rectangle.) The falcon wings were a traditional emblem of Polish Cavalry dating back to the middle ages.

Next to the Divisional Insignia, the Arm-of-Service Flash and Unit Serial Number were painted. Since the 10th Mounted Rifles (P.S.K.) was an Armoured Reconnaissance Regiment, they bore the colors of the Reconnaissance Corps - Green over Blue on a 10" horizontally-divided square. The white number "45" indicated the Armoured Division's Reconnaissance Regt.

BRITISH DARK GREEN
10 pts Floquil RR48 Coach Green
3 pts Floquil RR13 Grimy Black



which can be identified by checking the division's order-of-battle.

On the opposite side of the hull, a white triangular marking indicated a vehicle of No.1 Squadron. This, too, appeared on both front and rear hull plates, as did the War Department (Census) Number which was also in white. On both sides of the vehicle, a small Allied recognition star was placed as shown in the illustration. An additional recognition insignia appeared on turret roof, however, this was considerably larger and was surrounded by a 3" wide ring.

The second Cromwell shown here was also a Normandy veteran, though its employment was far different from that of its Polish counterpart. It was not even part of an armored unit, being instead the Troop Commander's vehicle of "B" Troop, "G" Battery of the 5th Royal Horse Artillery. The 5th RHA was attached to the British 7th Armoured Division and it was standard procedure for Battery and Troop Commanders to accompany the units they were to support. Since the 7th Armoured Division's tank units were equipped with Cromwells, the artillery officers were provided with them also. Their markings, however, were quite distinctive and different.

To begin with, the Divisional Formation sign was painted on the front and rear hull plates. This was a variation of the original "Desert Rat" insignia designed by the wife of the division commander, Mrs. Creagh, in 1940; however, the red square had been elongated into a rectangle with a narrow white border around it.

Immediately below the Formation Sign was the Royal Artillery Arm-of-Service Flash, a horizontally-divided square, red over blue - with the Unit Serial Number "76" in white. The number indicated the Second Senior Field Artillery Regiment (5th RHA). The other regiment (the 3rd RHA) bore a "74" as their Unit Serial.

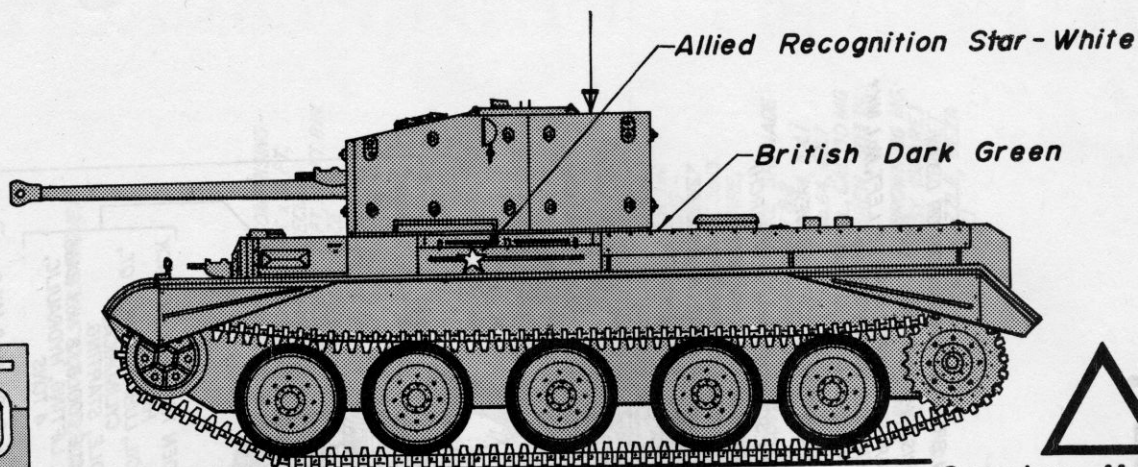
Opposite the combined Unit Serial and Formation Sign was the special Artillery Tactical Sign. This consisted of a square approximately 12" on each side, and bordered by a narrow white band. The interior was divided into red and blue sections, and it was the arrangement of these sections that indicated the sub-unit to which the vehicle belonged. In our case, the red upper right hand quarter indicates "G" Battery, while a red lower right quarter would designate the second senior battery, and the lower left quarter, the junior battery. Regimental Headquarters employed a horizontally divided square identical to the Arm-of-Service Flash.

Superimposed on the square was a letter or combination of letters and numbers which identified the vehicle within the Battery. Each vehicle, from the OP tanks to the water truck, had its own code letters, and those applying to the armored vehicles are given below:

Vehicle:	Personnel:	Code:
Cromwell VII.(AOP)	Battery CO	X
Bren Carrier (AOP)	Battery Survey NCO	Y
Cromwell VII.(AOP)	A Troop Commander	RA
Cromwell VII.(AOP)	B Troop Commander	RB

Troop Commanders in the other two batteries were

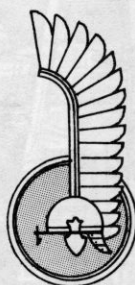
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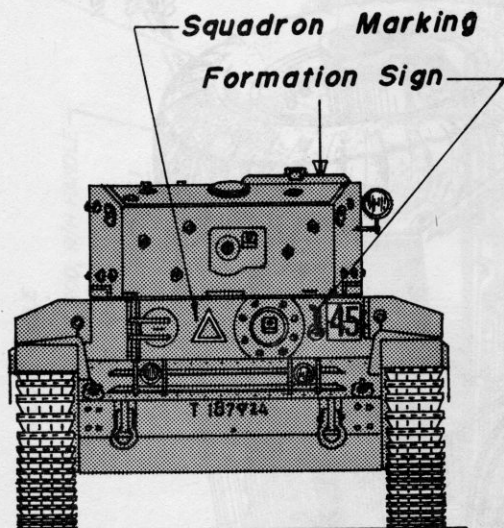
45

Unit Serial Number
10th Mounted Rifle
Reg. - Green Upper
Half, Blue Lower
Half & White No.

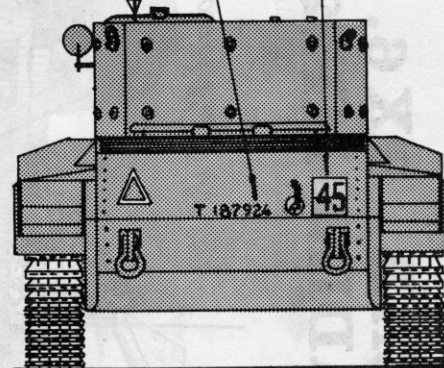
Squadron Marking
White Triangle



Formation Sign -
1st Polish Arm'd. Div.
Black Outer Circle
& Emblem With
White Spacings &
Orange Inner Circle



Unit Serial Number
Census Number
(White)



Cromwell Mk. VII - 1st
Polish Arm'd. Div., 10th
Mounted Rifle Regiment
Normandy 1944

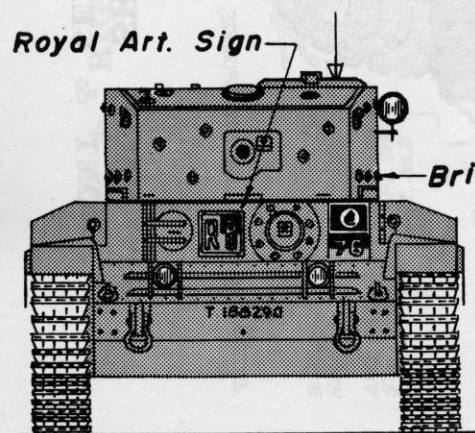


Combination Unit Serial
No. & Formation Sign
7th Arm'd. Div. in Red,
White Outline. White
No. With Upper Half in
Red, Lower Half in
Blue

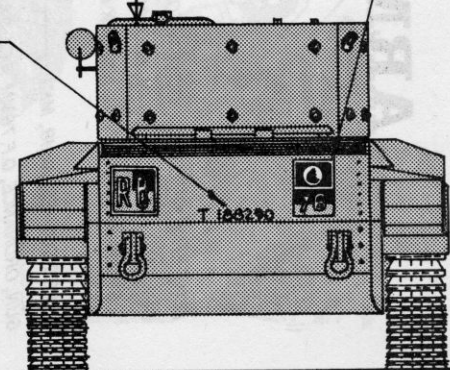
Royal Artillery Tac-
tical Sign - White
Letters & Outline,
Small Square in Red
Remainder in Blue



Formation Sign & Unit
Serial Number

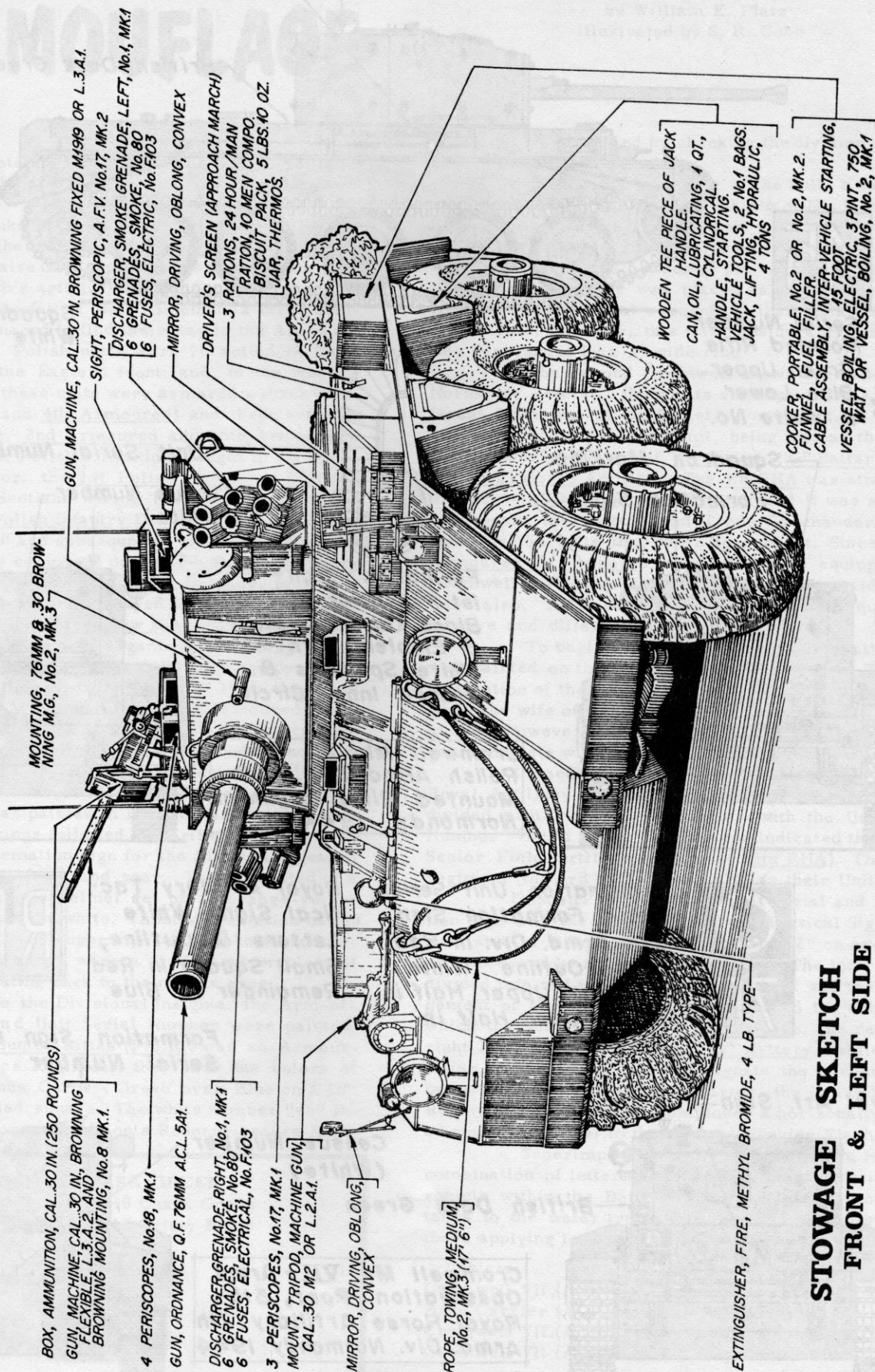


Census Number
(White)



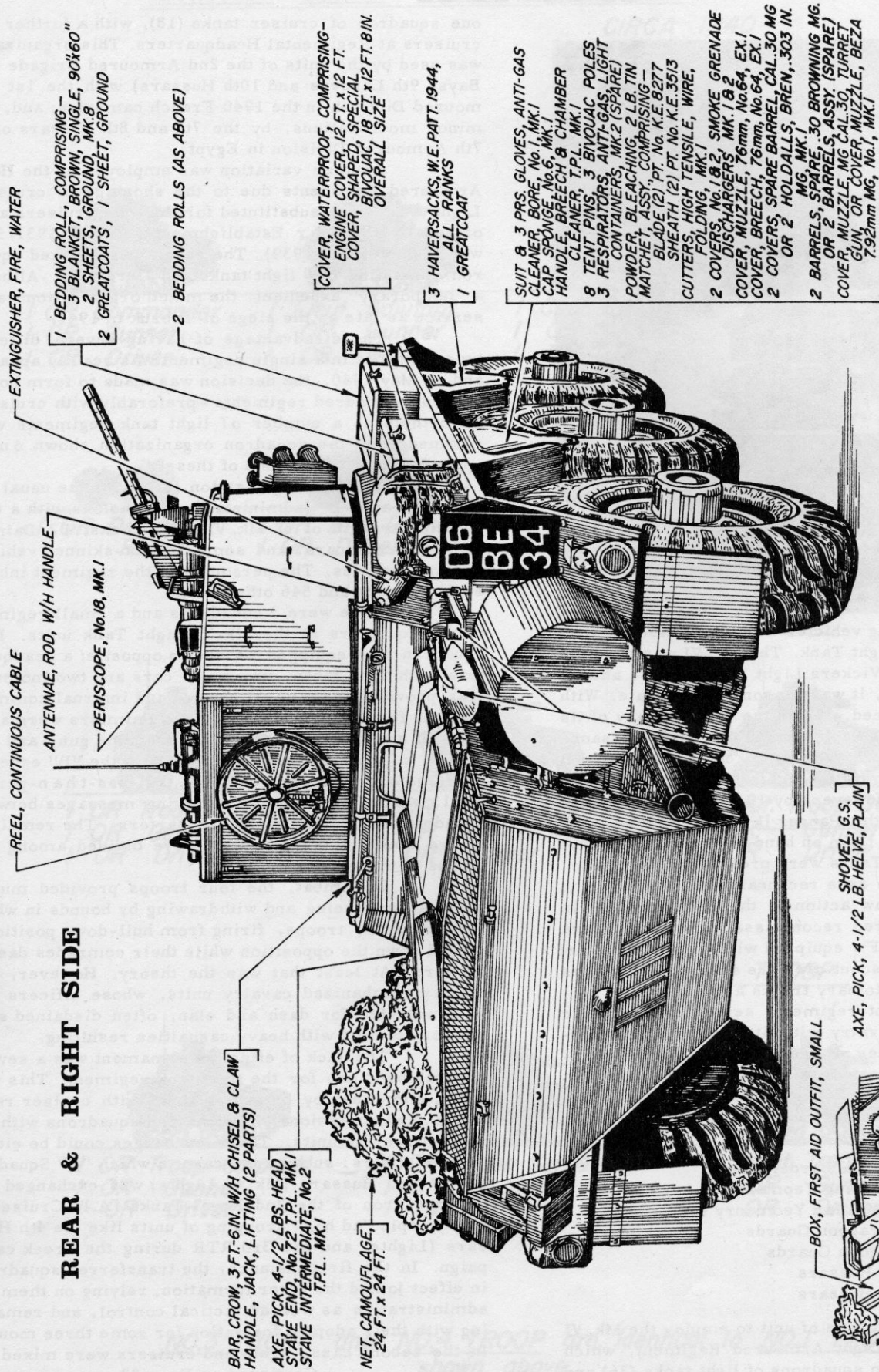
Cromwell Mk. VII - Arm'd.
Observation Post, 5th
Royal Horse Artillery, 7th
Arm'd. Div. Normandy 1944

ARMoured CAR, 6X6, 76mm GUN, SALADIN MK.2

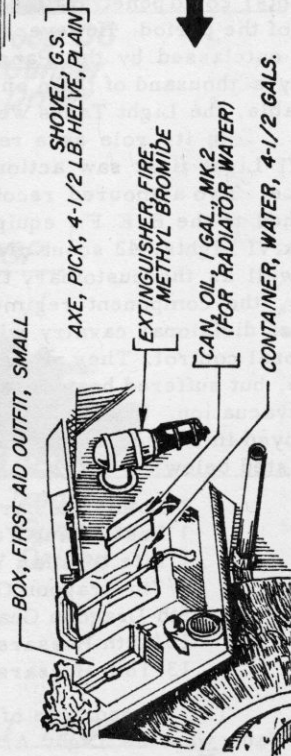


**STOWAGE SKETCH
FRONT & LEFT SIDE**

REAR & RIGHT SIDE



PARTIAL VIEW LEFT REAR FENDER



BRITISH LIGHT TANK COMPANY

1940~1941



Few fighting vehicles were less effective than the British Mk. VI Light Tank. The Mk. VI was the final development of the Vickers Light Tank series, and for its designed purpose, it was reasonably adequate. With a 34 m.p.h. road speed, it had the "legs" of any of its contemporaries, a desirable quality in a reconnaissance vehicle; and the .5 inch Vickers machine gun (A and B variants) could penetrate the lighter tanks and armored cars of the period. However, by 1940, the Mk. VI tanks were outclassed by the Panzer II. Nevertheless, with nearly a thousand of them on hand, and few other tanks available, the Light Tanks were pressed into service.

In its role as a reconnaissance vehicle, the Mk. VI Light first saw action in the 1940 campaign in France. Two armoured reconnaissance brigades were attached to the B. E. F., equipped with a combination of 28 Mk. VI Lights, 42 scout carriers and 41 motorcycles - as well as the customary trucks and lorries. In actuality, the component regiments served in the classic role of divisional cavalry with little or no brigade operational control. They proved adequate for reconnaissance, but suffered heavy casualties in the long retreat and evacuation. In all, 7 regiments of this type were employed in France during the 1940 campaign, and they are listed below:

- 1 Lothian & Border Horse
- 1 East Riding Yeomanry
- 1 Fife & Fofar Yeomanry
- 4/7th Dragoon Guards
- 5th Dragoon Guards
- 15/19th Hussars
- 13/18th Hussars

The second type of unit to employ the Mk. VI Light Tank was the Light Armoured Regiment, which was to consist of two squadrons of light tanks (36) and

one squadron of cruiser tanks (18), with a further four cruisers at Regimental Headquarters. This organization was used by the units of the 2nd Armoured Brigade (The Bays, 9th Lancers and 10th Hussars) with the 1st Armoured Division in the 1940 French campaign; and, with minor modifications, by the 7th and 8th Hussars of the 7th Armoured Division in Egypt.

Another variation was employed by the Heavy Armoured Regiments due to the shortage of cruisers. Light tanks were substituted for the light cruisers authorized by the War Establishment (W. E. 1/1931/5B/1 wef 27 September 1939). The result was a mixed squadron consisting of 8 light tanks and 7 cruisers. Although a "temporary" expedient, the mixed organization was in service as late as the siege of Tobruk in 1941.

The disadvantage of having several different types of tanks in a single regiment was readily apparent and in May 1940, the decision was made to form homogeneous armoured regiments - preferably with cruisers. Nevertheless, a number of light tank regiments were retained, and the squadron organization shown on the opposite page is from one of these.

The new organization called for the usual "A" (fighting) and "B" (administrative) echelons with a total vehicle strength of 52 Mk. VI Light Tanks, 12 Daimler "Dingo" scout cars, and some 20 soft-skinned vehicles and motorcycles. The personnel of the regiment included 31 officers and 546 other ranks.

There were 3 squadrons and a small regimental headquarters in the Mk. VI Light Tank units. Each squadron was equipped as shown opposite; a headquarters with four tanks, two scout cars and two motorcycles provided the tactical control and internal communications for the squadron. The two Daimlers were armed with a single Bren .303 light machine gun, and employed in scouting and for liaison with the "B" echelon. The motorcycles supplemented the less-than-perfect No. 11 wireless sets by carrying messages between squadron and regimental headquarters. The remaining twelve tanks in the squadron were divided among four troops of three vehicles each.

In combat, the four troops provided mutual support, advancing and withdrawing by bounds in which the stationary troops, firing from hull-down positions, pinned down the opposition while their comrades dashed forward. At least that was the theory. However, the newly mechanized cavalry units, whose officers had been selected for dash and elan, often disdained such cautious tactics with heavy casualties resulting.

The lack of effective armament was a severe tactical handicap for the light tank regiment. This was offset somewhat by brigading them with cruiser regiments, and occasionally exchanging squadrons with the more powerful units. These exchanges could be either formal affairs, such as the case in which "B" Squadron of the 3rd Hussars (Mk. VI Lights) was exchanged for "B" Squadron of the 2nd Royal Tanks (A.10 Cruisers); or a simple "ad hoc" grouping of units like the 4th Hussars (Lights) and the 3rd RTR during the Greek campaign. In the first instance, the transferred squadrons in effect joined the other formation, relying on them for administrative as well as tactical control, and remaining with their adopted formation for some three months. In the second case, lights and cruisers were mixed for

- Continued on Page 32 -

BRITISH LIGHT TANK SQUADRON

CIRCA 1940

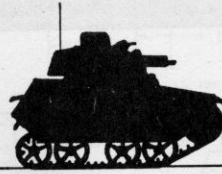
SQUADRON HEADQUARTERS



1 OR Commander
1 OR Gunner
1 OR Driver



1 Lieut. Adjutant
1 OR Gunner
1 OR Driver



1 Capt. 2d-in-Cmd.
1 OR Gunner
1 OR Driver



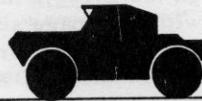
1 Major Squadron CO
1 OR Gunner
1 OR Driver



1 OR Dispatch Rider



1 OR Bren Gunner
1 OR Driver



1 OR Bren Gunner
1 OR Driver



1 OR Dispatch Rider

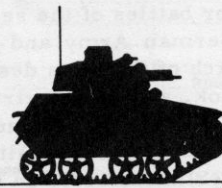
NO. 1 TROOP



1 OR Troop Corporal
1 OR Gunner
1 OR Driver



1 OR Troop Sergeant
1 OR Gunner
1 OR Driver

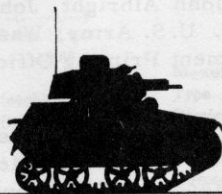


1 Lieut. Troop OC
1 OR Gunner
1 OR Driver

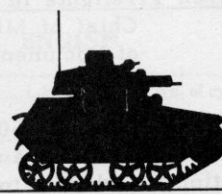
NO. 2 TROOP



1 OR Troop Corporal
1 OR Gunner
1 OR Driver



1 OR Troop Sergeant
1 OR Gunner
1 OR Driver



1 Lieut. Troop OC
1 OR Gunner
1 OR Driver

NO.3 TROOP and NO.4 TROOP are identical to NO.1 TROOP
shown above.



Book Review: Armoured Fighting Vehicles of the World, Volume 5, German AFV's of World War II., Ed. by Duncan Crow (Profile Publications Ltd., Windsor, Berkshire, England, \$19.95)

Review by James Steuard

This book is the newest and latest in the Profile "AFV's of the World" series, and is the volume dealing with German armored vehicles. It is expensively printed on glossy paper, with excellent hard covers and an attractive dust jacket (featuring Uwe Feist artwork). The book contains 307 pages, organized in two separately-numbered sections, following a brief four page introduction by the editor.

The first section contains 243 pages, and contains the vehicular material, with coverage of all the types of German tanks (from the Panzer I through the E.100), the Sd.Kfz. 251 and 250 armored halftracks, and various German armored cars. The section concludes with a 20 page summary of German self-propelled weapons, in illustration format. Basically, this section contains the separate (or individual) Profiles on the subject vehicles, written by such authorities as Walter J. Spielberger, John F. Milsom, Major General N. W. Duncan and the team of Peter Chamberlain and Chris Ellis. As with the individual Profiles, the photographic coverage is tremendous, with over 500 photographs in the book, and there are colored four and five view drawings in addition to the Uwe Feist colored artwork. There is a comprehensive index for the first section which makes the task of finding information on any specific vehicle simple.

The second section of the book contains two chapters. The first is written by Brigadier H. B. C. Watkins and contains a brief history of the German armored forces, from their inception in 1922 (when then-Captain Heinz Guderian was first posted to the Motorized Troops Department) to the end of the war. Coupled with numbers of photos of the leading armored officers of the Wehrmacht and armored equipment, there are twelve maps illustrating most of the campaigns or major battles of the second world war. The second chapter is written by Duncan Crow and contains brief histories of the German Army and Waffen-SS Panzer-Divisionen. I say "brief" in that there is a good deal more that could be said on each of the units described, but it must be realized that there is still a tremendous amount of material contained in the book, and this is virtually the first time it has all been put together in one volume.

I would strongly recommend this volume to anyone seriously interested in German armored equipment and the history of the Panzer troops. Although expensive, it is one that belongs on the book shelf along with such books as von Senger und Etterlin's classic on German armored vehicles and Lidell Hart's history of the Royal Armoured Corps. Any complaints that I might have on this volume are minor in nature; there are a few inaccurate photo captions, and I wonder at the need to provide two sets of Wehrmacht divisional tactical markings (which also contain a few inaccuracies). The extensive collection of photos, the well-written vehicle histories, and the unit histories far outweigh any criticisms that I might have, and the book is well worth having (and might make an excellent Christmas gift).

Our sample copy of this publication was obtained from Profile Publications Ltd., P.O. Box 2368, Culver City, California 90230, and further inquiries from American readers should be directed to them.

Book Review: Seven Firefights in Vietnam, by John Albright, John A. Cash and Allan W. Sandstrum (Office of the Chief of Military History, U.S. Army, Washington, D. C., available from the Superintendent of Documents, US Government Printing Office, Washington, D. C. 20402, \$1.00)

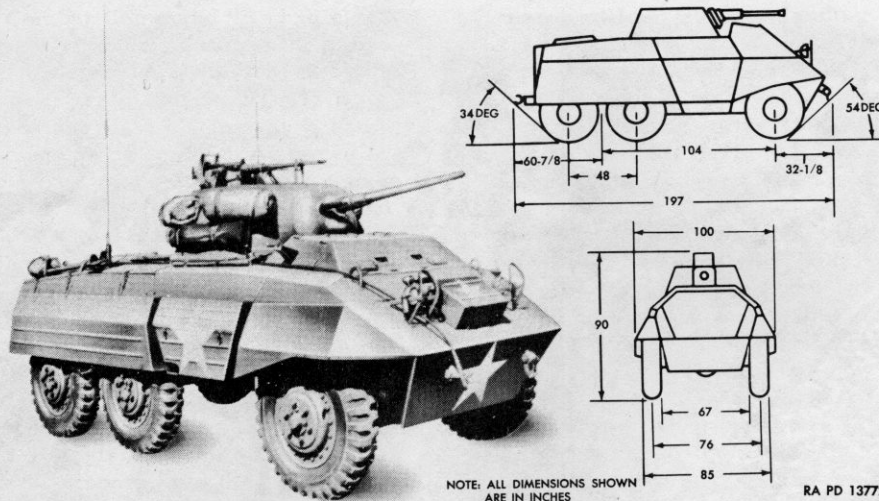
Review by James Steuard

This paper-covered, 160-page book covers seven diverse combat actions that took place in Vietnam in the period from 1965 to 1968. The authors all served as combat officers in Vietnam and the accounts were taken from personal observation, in addition to After Action Reports, Daily Journals and interviews conducted later.

To say that the seven described "firefights" are "diverse" is practically an understatement. Actions described include a Riverine operation, a Viet Cong ambush of an armored cavalry protected convoy, a defense against a North Vietnamese armored attack (involving PT-76's), a helicopter gunship mission, and more. The accounts are extremely well-written and all are presented in a most readable and interesting style. The brief "firefights" accounts are well detailed with excellent maps and clear photographs (which often were taken during the actions described).

If you're interested in small unit combat actions, and have not read into the recent Vietnam war, this book provides an excellent glimpse into company and battalion-level combat operations against a well-equipped and formidable enemy. The book contains heroism (describing a Medal of Honor incident for example), a good amount of bravery in the face of enemy fire, and an excellent description of the complexities of modern warfare. For those students of modern combat, this book is a must, and it is well recommended to those interested in small unit actions.

CAR, ARMORED, LIGHT, M8



Technical Manuals: 9-743, 9-1743, 9-1825B, 9-1826C, 9-1827C, 9-1928A, 9-1832A; Supply Catalog: SNL G-136.

Classification: Limited Standard.

Armament: 1 gun, 37-mm, M6; 1 gun, machine cal. .30, M1919A4 (flexible), mounted coaxially; 1 gun, machine cal. .50; M2, heavy barrel (flexible), pedestal mounted on top of turret.

Ammunition: 80 rounds, 37-mm for vehicles having 64-round ammunition racks, 50 rounds for vehicles having 34-round racks; 400 rounds, cal. .30 for carbine M1; 1,575 rounds, cal. .30 (machine gun); 420 rounds cal. .50; 12 hand grenades; 4 pots, smoke, M1 or M2; 6 mines, antitank, w/fuze; 15 signal ground (assorted).

Fire Control and Vision Devices: Telescope, M70D (sight).

Communications: (SCR-506 or SCR-193T or AN/GRC-9) or (SCR-506 or SCR-193T or SCR-608B or RC-99); or (SCR-506 or SCR-193T or AN/GRC-9 or SCR-694C) and SCR-619 or SCR-610) and (RC-99; or SCR-619 or SCR-610) and (RC-99).

GENERAL DATA

Crew	4
Weight (lb)	Net 14,500; Payload 2,700; Gross 17,200
Axle gear ratio	6.66:1
Axle load (lb):	
Empty	front 5,010; rear (each) 4,745
Loaded	front 6,360; rear (each) 5,420
Tires:	
Ply 12; Size 9.00 x 20; Pressure (psi)	front 60; rear 50
Tread, center-to-center, front	(in.) 76
Vehicle dimensions:	
Ground clearance	(in.) 11 1/4
Pintle height	(in.) 26
Shipping dimensions, uncrated	(cu ft) 1,030; (sq ft) 137
Electrical system	(volts) 12
No. of batteries	1
Type of ground	negative
Fuel octane rating	72

Purpose: To provide high-speed mobility, defense fire-power and crew protection for reconnaissance.

GENERAL DATA—Continued

Capacities:	
Fuel	(gal) 54
Cooling system	(qt) 23 1/4
Crankcase, refill	(qt) 7
Transfer	(qt) 2 1/4
Transmission	(qt) 4 1/2
Axles (qt)	front 2 3/4; rear (each) 2 1/4
Brakes:	
Manufacturer: Bendix	Type; hydrovac
Parking brake, type	transfer
Transmission forward speeds	4
Gear ratio	High 1:1; Low 6.499:1
Transfer speeds	2
Gear ratio	High 1:1; Low 1.956:1

PERFORMANCE

Computed grade ability in lowest gear, loaded	(percent) 60
Turning radius	(ft) 28
Fording depth	(in.) 32
Fuel consumption, loaded	(mpg) 5
Cruising range, loaded	(mi) 250
Allowable speed, recommended	(mph) 56

ENGINE

Manufacturer: Hercules	Model JXD
Type	L-head, 4-cycle; No. of cylinders (in line) 6
Displacement	(cu in.) 320
Bore	(in.) 4
Stroke	(in.) 4 1/4
Governed speed	not governed
Compression ratio	6.5:1
Brake horsepower (max w/std accessories)	.86 at (rpm) 2,800
Torque (max)	200 lb-ft at (rpm) 1,150

ADDITIONAL DATA

Transmission, type	sliding-gear
Rear axle, type	spiral-bevel, full-floating

Anzio

Part Eight: BREAKOUT !

by John Yonos



During the lull at Anzio, the rest of the U.S. Fifth Army had been trying to break through the German lines at Cassino. In March the 2nd New Zealand Corps had been stopped by the determined efforts of the German Fallschirmregiment 3. To maintain the initiative, the Allied commander of the Mediterranean Theater of Operations, General Sir Harold Alexander, moved the British Eighth Army from the Adriatic coast to new positions before Cassino. A new operation, "Diadem", was planned for May, calling for a simultaneous attack, by both Armies. If they were successful, the VI. Corps would break out of Anzio, and cut Highways 6 and 7.

General Truscott, the VI. Corps commander, submitted four plans which could be mounted within 48 hours of authorization; and from these Alexander selected "Operation Buffalo". This plan called for VI. Corps to break out of the beachhead at Cisterna and proceed via the Velletri Gap to Valmontone to cut both Highways 6 and 7; however, it was not to be launched until the green light was given by General Alexander. General Mark Clark, the U.S. Fifth Army commander, also approved of the plan, but wished to leave the cutting of Highway 6 as a secondary objective and the capture of Rome as the primary goal. If the offensive out of the beachhead was successful, Clark told General Truscott to plan to go through the Alban Hills quickly.

On 11 May, the Spring Offensive against the Gustav Line began, and the men at Anzio tensed and waited for the call to launch "Operation Buffalo". The U.S. 3rd Infantry Division was to spearhead the attack

Above: Men of the 1st Special Service Force advance along the railroad embankment. (U.S. Army Photo)

on Cisterna. This division had been stopped in January by the Hermann Göring and the 29. Panzer-Grenadier-Divisionen; but now it would be different. The 3rd Division had held the front line in that sector for most of the past three months. They had patrolled the German lines and knew where most of the enemy strongpoints were located. And now they would also be facing weaker opposition - the 362. and 715. Grenadier-Divisionen. These units did not have the same quality of fighting spirit as the previous defenders of Cisterna.

The "go ahead" was given for "Buffalo" for 23 May, and to deceive the Germans into thinking the main attack was up the Albano road, the British 1st and 5th Divisions made several limited attacks in their sectors. At 0545 hours on 23 May, VI. Corps artillery poured its murderous fire on the German positions before Cisterna. Then after 45 minutes, the fire was lifted and the tanks of the 1st Armored Division and the infantry of the 3rd Division jumped-off. Combat Command "A" used "Snakes" (long metal tubes containing high explosives) to clear the mine fields, and got off to a good start. The "Snakes" contained so much explosive material that they killed or dazed many Germans in forward positions. Infantrymen of the 135th Infantry Regiment (of the 34th Infantry Division), who were riding on the tanks quickly jumped-down and rounded-up these Germans. The 3rd Battalion, 1st Armored Regiment under Lt. Col. Lydon B. Cole, moved ahead of the infantry towards their first objective, the railroad embankment before the Velletri Gap. Small units of German infantry were routed while others attempted to get within range to toss hand grenades into the open turrets. The machine guns of the tanks took care of either contingency. Mines

damaged a few tanks as did some German tanks and self-propelled guns on a knoll to the right until artillery fire drove off the enemy. At the railroad embankment the Americans found fewer anti-tank guns than expected, and by dark Combat Command "A" was well beyond it.

Meanwhile, Combat Command "B" had elected not to use the "Snakes" and had suffered the consequences. American mines had not been cleared by the infantry, and so many tanks from Company D, 13th Armored Regiment were damaged that Company E had to take over the lead. The 3rd Battalion, 6th Armored Infantry Regiment, under Lt. Col. Robert R. Linvill, moved ahead of the tanks. After the mines had been cleared, tanks quickly overtook the infantry. However, the impetus had been lost and the armor could not cross the railroad embankment by dark. The maintenance companies kept busy through the night repairing the 40 vehicles that were damaged that morning.

The 45th Infantry Division moved out to protect the left flank of the 1st Armored Division. As they outposted the Carano Creek area, elements of the German 3. Panzer-Grenadier-Division counterattacked. A call went out for armored support, and the 1st Armored Division reserves were dispatched. By the time Col. Hamilton H. Howse's 3rd Battalion, 13th Armored Regiment arrived, Allied artillery fire had stopped the enemy counterattack. The losses to 1st Armored Division for the day amounted to only 11 Shermans knocked out, but 44 more were damaged along with 8 M-10 Tank Destroyers.

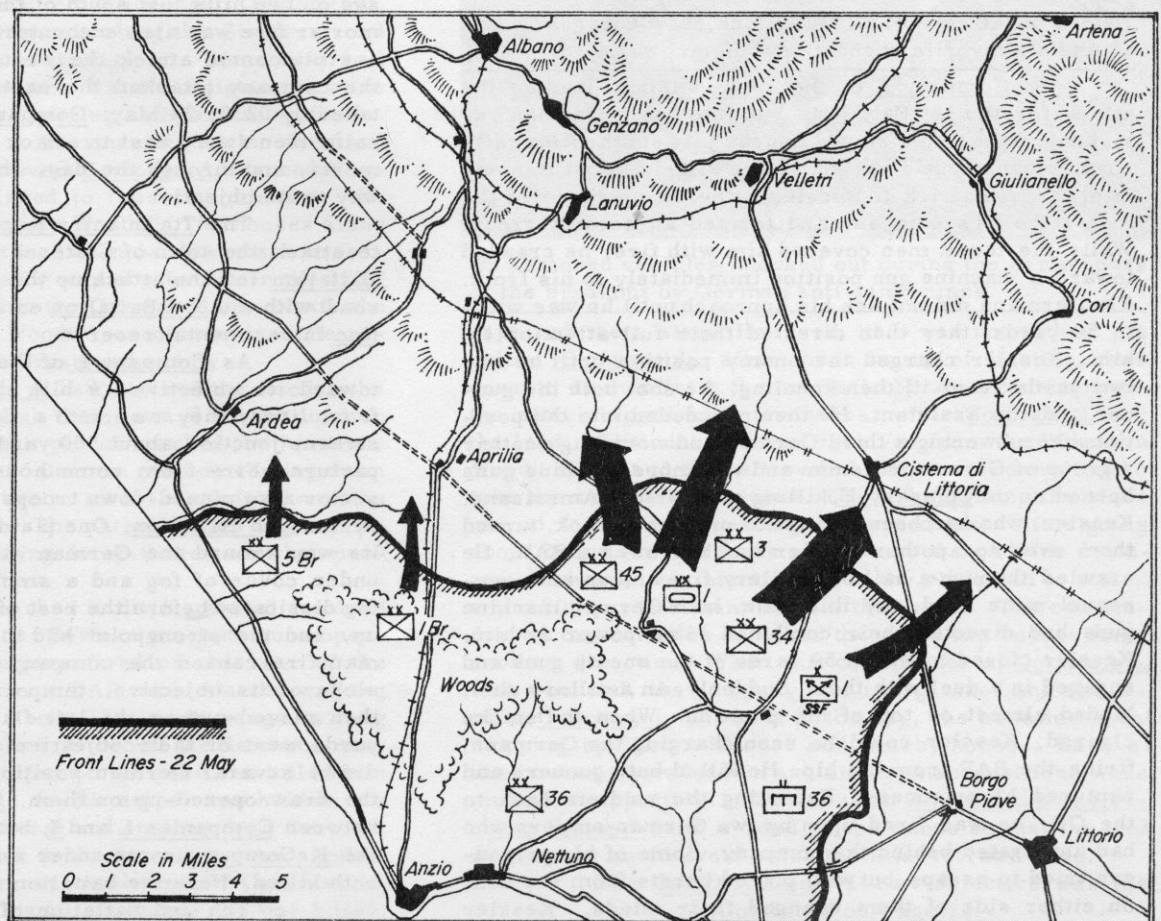
On the right flank of the U.S. VI. Corps, the First Special Service Force jumped-off to cover the southern flank of the U.S. 3rd Division in its attack on Cisterna. They made rapid progress through the light German defenses. By evening, the 1SSF had cut Highway 7 and were moving behind Cisterna. Their right flank was protected by the 36th Engineer Regiment, which had been used as infantry since the dark days of February.

The main attack on Cisterna di Littoria (Cisterna) was to be accomplished by the 3rd Infantry Division. On the morning of 23 May, the 30th Infantry led the attack on the German positions before Cisterna. As Company G (Capt. Hugh E. Wardlaw) passed through a narrow ditch to the line of departure they came under heavy enemy mortar and artillery fire. One shell landed among the 2nd Platoon, wounding all but four men. At another point in the line, Company K, under 1st Lt. Amiel L. Spillman, also came under heavy German artillery fire;

within a few minutes, they had suffered over 50 casualties. The only thing they could do was to advance as quickly as possible.

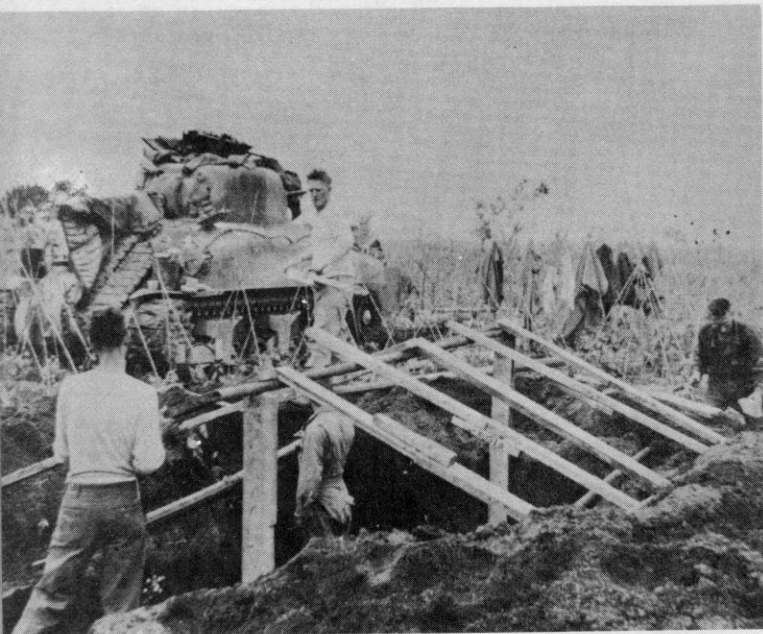
Company A of the 30th Infantry, under Capt. K. A. Noseck, was attached to the 3rd Battalion. Their objective was a group of farm houses on which the German artillery fire was landing. By 0730, they had captured 125 Germans, including 2 officers, two 75mm anti-tank guns, and the objective. They were seven hours ahead of schedule, and so friendly artillery fire was still falling on the now captured houses. Their radio was also not working. To add to their plight, a German 88mm self-propelled gun and a large group of infantry with three machine guns opened-up on them. Pfc. John A. Dutko suddenly jumped up from his position and ran toward the German positions, firing his BAR from the hip. He advanced about 100 yards and jumped into a shell hole which one of the American artillery shells had just made. Advancing from that position with all three enemy machine guns now firing at him, he skirted the 88mm gun, reaching a position where only one of the machine guns could fire at him. Knocking this weapon out with a hand grenade, Dutko advanced again on the 88mm gun. He knocked out the enemy five man crew with a long burst from his BAR, and then attacked the other two machine guns. He killed the crew of the first gun with a single burst, but was wounded by the second gun. Instead of seeking cover, he charged this last gun, killing the enemy crew and then collapsing over the enemy weapon. Pfc. John A. Dutko was posthumously awarded the Congressional Medal of Honor for his actions.

Company L, under Capt. R. B. Pridgen, was given the task of cleaning-out Fosso Feminamorta (or Dead Woman's Ditch). The Germans had placed a strongpoint of company strength across this ditch, placing



The Anzio Breakout - First Day, 23 May 1944

machine gun positions in the walls of the ditch with outposts of riflemen, concertina and double-apron wire. A light tank which was to support Company L got bogged down in five feet of water before reaching the German positions. Of the two Shermans which were also to support them, one never arrived and the other was disabled by a mine before reaching the line of departure. Company L attacked the German positions alone. Later, a platoon of riflemen from the battle-sled force, whose tanks had been disabled, aided Company L in attacking the position, and after twenty-four hours of hard fighting, Company L seized their objective.



Before the Breakout, an M4A1 tank crew engages in one of Anzio's favorite occupations: digging in.

Company E of the 30th Infantry, leading the attack for the 1st Battalion, ran into heavy German resistance from some ruined houses just south of the railroad embankment. Four men were killed almost immediately. Pfc. Patrick L. Kessler gathered up three of the men from his company and formed an assault group. While the three men covered him with fire, he crawled toward a machine gun position immediately to his front. The Germans did not see his approach until he was within 50 yards; they then directed their full attention to him. Kessler charged the enemy position until he was two yards from it; then kneeling, he shot both the gunner and the assistant. He then proceeded into the position, overpowering a third German and wounding another. A group of German riflemen and two more machine guns opened up on Company E, killing another ten Americans. Kessler, who had been taking his prisoners back, turned them over to another soldier and borrowed a BAR. He crawled through a hail of artillery fire and an anti-personnel mine field. By this time, both German machine guns had directed their combined fire power at him. Kessler closed to within 50 yards of the enemy guns and engaged in a duel with them. Suddenly, an artillery shell landed almost on top of his position. When the smoke cleared, Kessler could be seen charging the Germans, firing the BAR from his hip. He killed both gunners and captured 13 prisoners. Escorting the soldiers back to the CP, he was fired upon by two German snipers who had infiltrated behind the company. Some of his prisoners tried to escape, but well placed bursts from the BAR on either side of them changed their minds. Kessler

then fired on the snipers until they too surrendered. Pfc. Kessler, who was killed in combat two days later, was awarded the Congressional Medal of Honor.

Meanwhile, Company A was under a heavy counterattack by elements of the 362. Grenadier-Division. Five runners had been sent back to the Battalion CP but only two arrived. Determined small arms fire drove the attacking Germans back. At 0900, a second counterattack was broken up by Allied artillery fire and the small arms of Company A, and throughout the day Company A held its objective, although continually pounded by German artillery. At 1630, Company I on the right flank of Company A had seized the high ground, but the price had been high; only 1 officer and 40 men were left. At 1616, the Germans again counterattacked this unit with an infantry battalion with supporting fire from 5 Panzer IV's. Using their own and captured German weapons, Company I beat off the attackers.

By late evening, Company K had moved up on the left flank of Company A, and the three badly battered companies organized their positions into a battalion strongpoint. The Germans made another counterattack at 2300, using all available infantry and 2 tanks. They penetrated the outer perimeter of Company A, but were driven-out in a night-long battle. At dawn, Allied artillery poured death and destruction on the remaining Germans in this area. Company G (2nd Battalion), 30th Infantry attacked a German strongpoint in another ditch, and after several hours of hard fighting, succeeded in driving the Germans out of their entrenched positions. The fight, however, left Company G with only 26 men.

The 1st Battalion was committed in mid-afternoon to seize high ground on either side of the railroad embankment west of Fosso Femminamorta. As Company B was leading the battalion towards its objective, it ran into a strong German force dug into some wrecked houses on two hills just south of the railroad. Artillery and mortar fire was also encountered. Capt. S. E. Seetin sent one platoon to attack the western hill while the rest of the company attacked the eastern one. Both hills were taken by 0230, 24 May. Company C, under Lt. Rex Metcalfe, then swung east to attack across Fosso Femminamorta, and through the day, the 1st Battalion fought its way to its objectives.

The 7th Infantry Regiment (3rd Division) was to attack the town of Cisterna di Littoria itself; the 2nd Battalion led the attack up the Borgo Montello-Cisterna road with the 3rd Battalion on its left and the 1st Battalion in regimental reserve.

As Company L of the 3rd Battalion proceeded toward its objective - a hill about 1800 yards from the front lines, they ran into a German force holding a stream junction about 500 yards north of the line of departure. Fire from some houses in the 2nd Battalion sector also pinned-down troops until they were captured by the 2nd Battalion. One platoon of Company L worked its way around the German strongpoint in the stream under cover of fog and a smoke screen, however, the fog dissipated before the rest of the company could move up, and the strongpoint had to be reduced. Heavy German fire caused the company to dig-in on the reverse slope of its objective, temporarily stalled. Company I then moved-out on the left flank, advancing some 300 yards west of their objective. As Company I entered a draw, several German positions on both flanks and in the draw opened-up on them. Company K was next sent between Companies L and I, but fighting was intense and the K Company commander and his replacement were both killed. Here the battalion spent the night.

The 2nd Battalion of the 7th Infantry attacked

on schedule, with a platoon of Shermans in support. As the men left the line of departure, they were fired upon by two German strongpoints; one was the group of houses which was also firing on Company L, and the other a single house about 700 yards from the line of departure and to the right of the road. Each strongpoint was surrounded with wire and mines and had numerous automatic weapons as well as tank support. Company E was assigned to reduce the houses on the left. One platoon was sent to flank the strongpoint and it met very difficult going. It reached the strongpoint with only 18 out of the original 34 men, and the five supporting tanks had been damaged by anti-tank mines shortly after moving out. Company F attacked the strongpoint on the right and captured it within 40 minutes. Next, one rifle platoon, a Sherman, an M-10 and a M-3 Stuart were sent to reduce two more enemy positions further ahead. The Sherman became mired in the mud; the M-10 was knocked out by German self-propelled guns; and so, only the light tank aided the attack. Nevertheless, both positions were captured.

The U.S. 15th Infantry Regiment (3rd Division) attacked to the right of the 7th Infantry, with the mission of bypassing Cisterna and seizing Highway 7 and the railroad embankment. A special task force, TF Paulick, named for its commander, Major Michael Paulick, and composed of Company A, 15th Infantry, a platoon of medium and a platoon of light tanks from the 751st Tank Battalion, a section of tank destroyers from the 601st Tank Destroyer Battalion, the regimental Battle Patrol, a platoon of machine guns and a section of mortars from Company D, a platoon from the Cannon Company, a medical detachment and a squad of engineers, was organized to fill a 3000 yard gap between the 15th Infantry and the 1st Special Service Force. On moving out, this unit immediately ran into heavy machine gun fire from Cisterna on its left, and from a ditch on its right. In addition, every house for about 600 yards along the Cisterna road had been converted into a strongpoint. Some even had tank support, and two Shermans and one light tank were lost to the German tanks covering anti-tank mine fields. One tank destroyer and a Sherman were also damaged by "friendly mines". However, Company A reached Fosso di Cisterna and continued to its first objective, the bridge southeast of "Chateau Woods". The houses along the way were finally captured when two Shermans crossed the Fosso di Cisterna by way of a bridge in the ISSF area and began firing into the German flank. Next, the task force attacked "88 Woods", encountering little resistance from the now disorganized enemy.

After Company A had cleared the woods, the Battle Patrol passed through them toward a road junction east of the woods. As the patrol reached the junction, they observed a reinforced German platoon coming down the road in a column of two's, as if they didn't know the Americans were around. The patrol set-up an ambush, killing twenty and capturing forty-three, and then proceeding toward its objective.

As they approached a ditch several hundred yards from their objective, German machine guns opened-up, and then four snipers fired on the rear of the patrol. Pfc. Henry Schaur, a BAR man, started walking toward the snipers. At about 170 yards range, a long burst from his BAR finished off two of the Germans near a house. Turning on a sniper on the road, he killed him with a single burst. The fourth sniper was hidden in a wheat field... another burst and another dead German. As Schaur proceeded back to the patrol, he saw another sniper behind the chimney on the roof of a house. A short burst from the BAR and this sniper too was killed.

When the patrol crossed the road, it was engaged by two German machine guns. Pfc. Schaur calmly knelt down and fired on the first gun some 60 yards away. He killed the two man crew and, reloading, killed another two who were running to man the weapon. Then he engaged the second machine gun, killing all four men around the weapon. All the while, the machine guns had been returning his fire until silenced and, in addition, enemy shells were landing all around him. He was not even slightly wounded. Following this incident, the patrol pushed on to its objective, Highway 7.

Meanwhile, the main attack by the 15th Infantry was going on, with the 3rd Battalion on the left and the 2nd Battalion on the right. Company L (3rd Battalion) led the attack in that sector. Their first objective was a road junction about 1500 yards east of Isola Bella. Several of the houses along the road had been made into enemy strongpoints. However, no anti-personnel mines had been sown south of the junction, although there were plenty of anti-tank mines. As Company L left the line of departure, they were hit by all types of German fire - small arms, mortars, self-propelled guns and artillery. Running across the open terrain quickly, they captured the first two houses. Patrols rushed the next two and with the fire support of the attached tank destroyers



US armored vehicles knocked out during the early hours of the breakout by German anti-tank mines.

captured them also. However, this was not without its price. Company L, after three hours of fighting, was down to 40 men from the original 150. As a consequence, the attack lagged for a few hours, while Company I took the lead. Additional fire was received from the "Chateau Wood" area, and the battle-sled team was committed to take the next pair of houses. The tanks hauling the sleds moved to the road junction and turned east. After going about 200 yards, the tanks were stopped by a wide drainage ditch and the infantrymen in the sleds had to attack some 200 yards distant without the armor. The remainder of the battalion attacked the same two houses from another direction. When the commander of Company L was wounded, the company was reorganized and attached to Company I. The rest of the day, the battalion spent mopping-up "Kraut Woods" and nearby houses. Each of the houses was wired-in and all German positions were mutually supporting. The battalion Ammunition and Pioneer Platoon built a road to the woods so that the tank destroyers could avoid using the mine-strewn road.

The 2nd Battalion's first objective was the

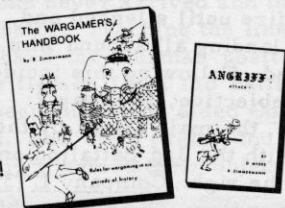
- Continued on Page 32 -

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Wargame Review: "El Alamein" by S. P. I. (Continued from Page 16).

historical conditions and the best method to handle this is to ignore the rule.

c. The September Scenario recreates the Battle of Alam Halfa. The orders-of-battle appear sound and the starting dispositions are accurate. In this variation, minefields and engineers play a key role and the Axis player especially must be thoroughly familiar with the intricate rules on their usage. This is perhaps the most interesting scenario.

d. The October Scenario covers Montgomery's offensive of October 23 to November 7, 1942; and once again, there are problems with the order-of-battle. The Axis forces appear to be correct, however, there are a number of major errors in the composition of the Allied army. To begin with, the 1st Tank Brigade (6-8 at 4116) and the 1st Armoured Brigade (3-8 at 4016) were at cadre strength, and both were in the Suez Canal area at the time of the battle. The 131st Infantry Brigade (5-4 at 3920) was fully motorized and should be replaced by a 5-8. The Free French 1st Brigade (9-4 at 4125) should actually be two units - a 6-4 infantry brigade and a 3-8 "Flying Column". All of these modifications are possible with the counters provided in the game. I might also suggest one other special rule for this scenario. Based on the Allied reorganization of their armor during the middle of the battle, the Allied player should be able to reshuffle his armored units between the 5th game turn and the 7th turn. In this period, the Allied player may combine smaller armored and reconnaissance units together to form more powerful formations, or split up the larger units into a larger number of smaller units for pursuit purposes. This is accomplished by moving the units to be combined to a single square and stacking them together. After one turn in place, they are replaced and the new unit(s) may then move off. No combat is permitted during reorganization.

e. Scenario Variations - These consist of a number of relatively minor changes in the orders-of-battle, based on possible changes in the strategic situation (e.g. sending the U.S. 1st Armored Division to Egypt instead of to Tunisia). These may be selected to improve "play balance" in the scenarios, or as a handicap for players of differing experience.

4. Summary - In general, "El Alamein" is a good game which could have been made better by a little more careful research. A method of combining the three scenarios into a longer game would have been a particularly nice feature; but this would have required a great deal of work on order-of-appearance. While some of the special rules are complicated, they provide for a very realistic simulation and are not beyond the capabilities of the average wargamer. It is to be recommended... after all, think of the possibilities....

The British Light Tank Company of 1940-41 (Continued from Page 24).

for a few hours or days, as the tactical situation required.

The Mk. VI Light Tanks were withdrawn from service in combat units during the summer of 1941, the last vehicle being turned-in by the 1st RTR in December, after the Tobruk garrison had been relieved.

Anzio, Part 8, The Breakout! (Continued from Page 31).

"Chateau Woods". Company E led the attack. The Germans had set up a strong position along the southern edge of the woods where they were supported by tanks, self-propelled guns and artillery. Company E was stopped short of this German line, unable to move. Company F and Company E reorganized, and since Company E was so short on ammunition, they launched a bayonet assault on the German positions immediately in front of them. So successful were they that fifteen Germans were killed and eighty captured, although many got away. Tanks had supported this charge and were a great factor in its success. Company G bypassed the woods and continued to the next objective, another road junction. Only light resistance was encountered, so they next set out to clean-out Fosso di Cisterna. About 100 Germans in some caves, which were ill-suited as defensive positions, surrendered. After "Chateau Woods" had been secured, Companies E and F followed Company G, however, the battalion ran into stiff resistance at the railroad line. As daylight faded into darkness, the battalion was still struggling to reach the embankment.

"Operation Buffalo" was working at the end of the first day's attack. Although Cisterna was still in German hands, the German garrison was cut-off from outside supply and it looked as if the breakout couldn't be stopped.

Color 'n Camouflage: British Cromwell VII. (Continued from Page 20).

marked RC, RD, RE and RF. Other markings on the AOP tank were the War Department (Census) Number in white, 3" high numbers on the hull front and rear, and the Allied recognition "Normandy Star" which appeared on the turret roof.

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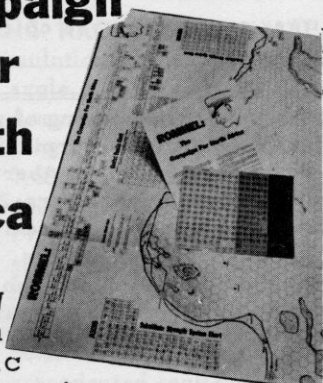
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Letters to the Editor

To the Editor:

Will your Magazine have any articles on the power plants of AFV's, that is, scale drawings with information? Something like in "British and American Tanks of WWII", pages 209 and 210. In other books, I have found pictures and drawings of AFV engines, but only top views and some cut-away views. Also, how is the engine mounted and why? For example, the Russian T54 side-mounted 12-cylinder engine. What makes an engine reliable or unreliable? I am sure there are others who wonder the same as I.

J. Takahashi
Foster City, CA

To the Editor:

I want to express my appreciation for your fine magazine. You do a damn fine job of answering unusual and difficult questions, and I especially like your "new" Armor in Pictures series. I appreciate your asking the readers for help in furnishing photos, and your publishing of these in the magazine.

Have you ever given any thought to the formation of research groups, who would work on answering difficult questions or finding photos of requested subjects? This would not have to be formal; it could work as follows: When an unusual or difficult question arises, you assign a "project" or "research" number to it, and publish the question in your magazine. Readers could then help in answering the question or supply photos, which could then be published in a special column (which could be a part of the AFV Inquiry). I'm sure that there's a lot of readers (like myself) who would like to get involved.

J. McKenzie
Long Beach, CA

Note from the Editor:

This does sound like an interesting approach and we'll give it a try if there are other persons also interested in this "research project" idea. If any reader thinks that this would be interesting and worthwhile, I'd like to request that they drop me a line with some ideas and maybe some "projects" for an initial listing. . . . we'll be glad to give it a try.

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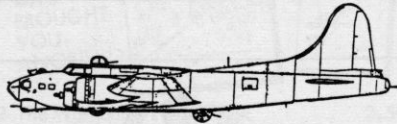


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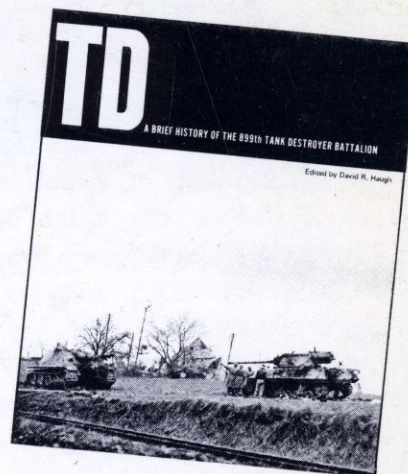
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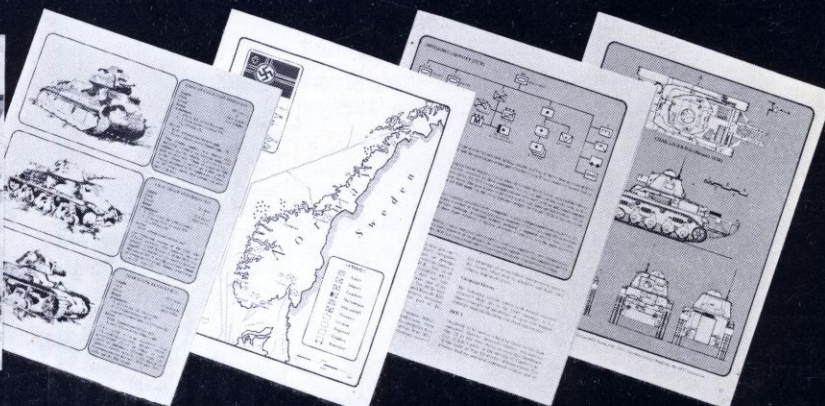
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